

Preliminary orthographic design for Ramari Dongosaro

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Abstract

This paper aims at providing a detailed account of a standardisation project currently underway for Ramari Dongosaro, or Sonsorolese (ISO 639-3: sov), an endangered language spoken by less than 400 speakers (Eberhard, Simons & Fennig 2021) in the Republic of Palau. The purpose of this paper is to function as a record of the project, providing a preliminary phonological analysis, along with recommendations for an alphabet for Sonsorolese and potential applications of it. Finally, with this paper, we aim to gain input and feedback from Micronesian languages specialists and linguists specialising in standardisation.

Keywords: Micronesia, Sonsorolese, community-based standardisation, phonology, phonetics, orthography

1. Introduction

1.1. Background and context

In the middle of the west Pacific, neighbouring Indonesia, Philippines and the Federated States of Micronesia, is Palau, an independent nation-state. Its linguistic landscape is an example of diglossia, with Palauan being used in the local, everyday life and English for administrative and official issues (Matsumoto & Britain 2000: 10). Both languages have official status, with Palauan being the only national language (Matsumoto & Britain 2000: 22). This multilingual context is also home to Ramari Dongosaro, or Sonsorolese (ISO 639-3: sov), and Ramari Hatohobei, or Tobian (ISO 639-3: tox), some of the languages of the southwestern islands of the Republic.¹

Ramari Dongosaro, or Sonsorolese (ISO 639-3: sov), is the language of Sonsorol, which is the main island of the State of Sonsorol. It belongs to the Chuukic, Micronesian group of the Austronesian family, and is part of a dialectal continuum spoken in the southwestern islands of the Republic of Palau: Sonsorol, Pulo Ana, Merir and Tobi (Grant 2017: 852). In the past, the Southwest islands presented high numbers of population (van den Berg 2014: 3). However, nowadays, the majority of islanders have migrated to the island of Koror for various reasons, such as economic, health, educational and environmental (typhoons). In the village of Echang, a mixture of Southwest islanders live and flourish, speaking Palauan and English leading to the emergence of Echangese, a mixture of Tobian, Sonsorolese, English and Palauan (Black & Black 2013; Taborosi 2018; Vita 2020).

¹ We would like to acknowledge Justin Andrew, Laura I. Miles, Frank Pedro, Lucy Pedro, Felicia Andrew, Lahaina L. Pedro, Peter W. Black and Barbara W. Black for their help, insights and recommendations in preparing the proposal that was submitted to the local authorities and their continuous work throughout this project. We would also like to thank and acknowledge our collaborators Thafaas Men's Organization, Dini Faruya Women's Association and Youth - Sonsorol State Youth.

According to Grant (2017: 853), Tobian and Sonsorolese are two of the most archaic languages spoken in the West Micronesian sprachbund, primarily on the phonological level, more closely related to nuclear Micronesian languages rather than other Chuukic languages, preserving the word-final voiceless vowels on stems. Their position in the family is still unclear, since descriptions of the languages vary from Capell's (1969) grammar, who argues they are more closely related to Ulithian (Capell 1969: 1), and van den Berg's (2014) linguistic sketch, both discussing both languages, to Vita's (2020) analysis of Tobian prosody and Grant's (2017: 853) claim that they are more closely related to Woleaian based on comparisons with other languages of the area. Regardless, there is an abundance of raw data on Kaipuleohone² (van den Berg 2013) and in the Endangered Languages Archive collection *Documenting Ramari Hatohobei, the Tobian language, a severely endangered Micronesian language* (Black & Black 2014), especially for Tobian.

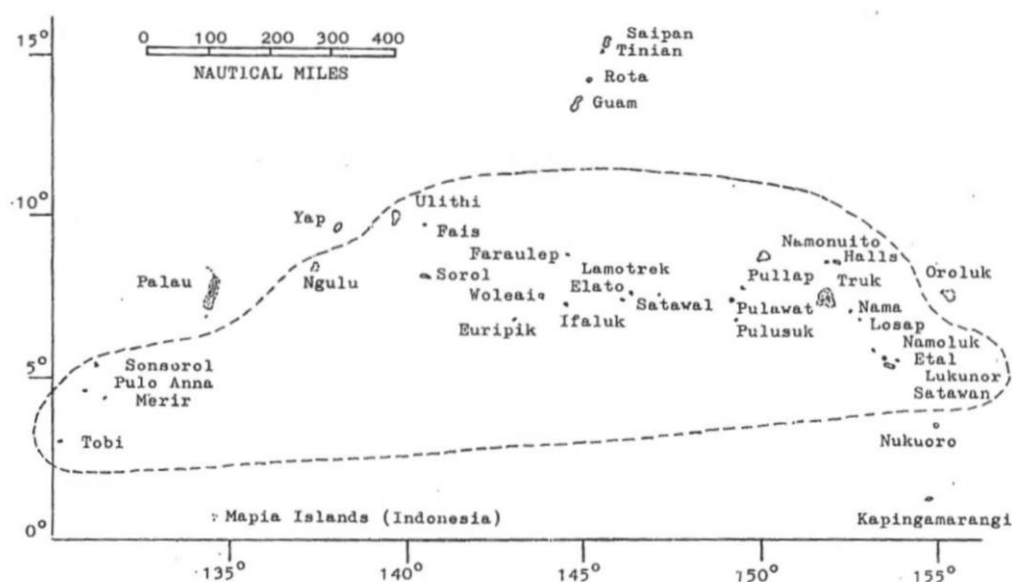


Figure 1. Boundaries of the Chuukic continuum (Quackenbush 1968)

1.2. Standardisation and language maintenance in Micronesia

A standard language has been considered as an ideal notion (Rehg 2004; Romaine 2008; Jones & Mooney 2017), yet its effects in a society are clearly visible, from the creation of resources such as grammar and dictionaries, to the implementation of policies in administration and education. For this reason, the standardisation process is usually initiated by political, social, cultural or religious motivations (Moseley 2017: 36–37) and although standardisation may concern distinct languages, it seems that ideologies, practices, discourses and beliefs travel across boundaries and borders (Milroy & Milroy 1999; Romaine 2008). Furthermore, in order for a standardisation project to be successful and for literacy in the oral language to increase, identifying domains that are not only traditional but which impact everyday life and associate the language to them are required (Casquite & Young 2017; Jones & Mooney 2017).

² Kaipuleohone is the digital language archive of the University of Hawai'i. <http://ling.hawaii.edu/kaipuleohone-language-archive/>

Standardisation and language maintenance efforts in Micronesia originated in the 1970s when a group of linguists undertook a project of documenting and describing Micronesian languages, the *Pacific Languages Development Project* (or PALI) (Rehg 2004: 499). Its goals included documentation of the languages of Micronesia, provision of training for local educators and promotion of literacy in the local language. Although the first two goals were mostly achieved, the last one of promoting literacy in the vernacular language was not, because of complex reasons, that is, inaction on the part of Micronesian educators and failure on the side of linguists to deal with previous orthographies and consult speakers about their desires and recommendations (Rehg 2004: 501–502). After an assessment of the project, Regh (2004: 506–510) provides the following recommendations for linguists interested in undertaking literacy projects in Micronesia:

- Make sure that the phonology of the language is clear.
- Diacritics may be difficult to be accepted by Micronesians since they are used to writing in English which contains no diacritics.
- When including new graphemes, choose the ones that are familiar and user-friendly.
- Build on existing practices.
- Combine underspecification with digraphs so as to eliminate the use of diacritics.
- When working with different varieties, it is important to be politically acceptable and propose solutions that are efficient for both readers and writers.
- Before deciding, test a preliminary version of it with the general public.
- It is important to listen to the community and realise the effect and impact our work has on its structure.

Although underspecification is undesirable (Hinton 2014: 144), Regh (2004: 508) seems to be accepting it in this case considering English's influence on Micronesian politics and settling with a combination of digraphs in order to avoid diacritics. In general, considering the PALI team's experience regarding the orthographies of various Micronesian languages, it is suggested that one should not focus on a standardised spelling system but rather encourage people to produce written materials that align with the community's needs and aspirations.

The Sonsorolese community is trying to promote the use of the language in official announcements and has expressed an interest in language work such as “writing a dictionary, revive or archive for future use, keep cultures alive especially for *faiḡire* (‘women’) and work on translating the Bible and all gospels” (personal communication, SPTS meeting with Thafaas Men's Organization, Dini Faruya Women's Association and Youth - Sonsorol State Youth on 28 June 2021). We hope that this project can further encourage such initiatives and make the current work easier.

2. The project

The origins of this project stem from the relationship Vasiliki Vita developed with the former governor of the State of Sonsorol, Laura Ierago, and the curators of the ELAR collection *Documenting Ramari Hatohobei, or Tobian, a severely endangered Micronesian language* (2014), Peter and Barbara Black. It was through Laura Ierago that Vasiliki Vita got in touch with Lahaina Pedro, who is part of the administrative personnel of the State of Sonsorol office and a member of the Young Historians of Sonsorol, the

main collaborators in this project and an association of Sonsorolese youth aiming at preserving the local culture and practices. Lahaina Pedro was then the one who introduced the two writers, leading to the submission of an application for an ELDP grant in 2019. However, due to COVID-19 the grant cycle was cancelled along with the project but after a few months, the writers got together and thought up how they could help the Young Historians in their work. Through Chelsea Pedro's connections, primarily her family, and Justin Andrew, Vasiliki Vita's consultant for her SOAS MA dissertation project, they got together and prepared a proposal that was later submitted to the local authorities, the State of Sonsorol and Hatohobei offices.

2.1. General structure

The standardisation project presented in this paper is based on surveys. This is mainly because of the fact that the two communities, Hatohobei and Sonsorol, are already writing their languages, although there is great variation. In this paper we will deal with the Sonsorolese side which is moving at a different pace than the Hatohobei side, primarily due to bureaucratic specifications. The aim is to reach a common ground regarding how the language should be written. Another reason for using surveys is the fact that the Linguistic Consultants (Vasiliki Vita and Chelsea Pedro, henceforth LcCs) are significantly distant. However, Chelsea Pedro undertook an eight-week summer 2021 internship with the Sonsorol State office leading to the organisation of workshops and outreach regarding the project.

The organisation of a Language Committee (henceforth LC) was encouraged in order to handle language matters and work in the community. When final decisions are made, these surveys will be shared with the authorities for an official registration of the alphabet in the states' constitutions and other legal documents. Hence subsequent translation of official documents at the state level of Sonsorol will be facilitated.

In the survey, participating speakers will be asked questions concerning their understanding of the structure of the project, their language practices and ideology. They will then be provided with words and a text selected by the LcCs based on the existing linguistic descriptions of the two languages to listen to (Capell 1969; van den Berg 2014). Google Forms will be used for preparing the surveys due to its capability for collaborative editing. However, due to the fact that not everybody in Palau has access to a computer and airtime is expensive, printed surveys are proposed. That is, a Group of Representatives (Sonsorolese Group of Representatives, henceforth GR) will distribute the surveys to members of the community while playing the recordings on their phone.

Please join us...

Thafaas
Men's Organization
JULY 12, 2021 MON
PHS
Resource Center
5:00 PM

**Sonsorolese
Orthography**
by *Chelsea Pedro*
& *Young Historians*

**Dini
Faruya**
Women's Association
JULY 14, 2021 WED
Civic Hall
5:00 PM

Youth
Sonsorol State Youth
JULY 15, 2021 THU
PHS
Resource Center
5:00 PM

Figure 2. Survey distribution events organised in July 2021³

Participating speakers will then be prompted to write the words and text they are listening to based on their personal preference and intuition. Finally, the LcCs and GRs will analyse the results and propose a suggested writing system to the LC which will make further suggestions and changes and announce the final product at another cycle of events, similar to the ones in Figure 2. Before distributing, it is necessary to identify the demographics of the participating speakers. After discussing with the collaborators,⁴ we have decided to make these surveys anonymous. For purposes of data protection but also involving as many participants as possible, it was decided to ask all community members above 18 to participate.

³Thank you to Laree Ierago for preparing this outreach poster.

⁴This project is organised in collaboration with volunteers from the Young Historians of Sonsorol (<https://www.facebook.com/younghistoriansofsonsorolstate/>), Thafaas Men's Organization, Dini Faruya Women's Association, the Friends of Tobi (<http://www.friendsoftobi.org>) and the Hatohobei State Youth Organization. Some of these volunteers will participate as members of the various groups, for example, volunteers from the Young Historians will participate as representatives, while others have assisted with communicating the project to local leaders or consulting them as regards to events on the ground, such as identifying participants, budget and other practicalities. Vasiliki Vita, Chelsea Pedro and the current collaborators have extended an invitation to local leaders to participate in this effort. The collaborators are in charge of selecting the members of the Language Committee and of the Group of Representatives.

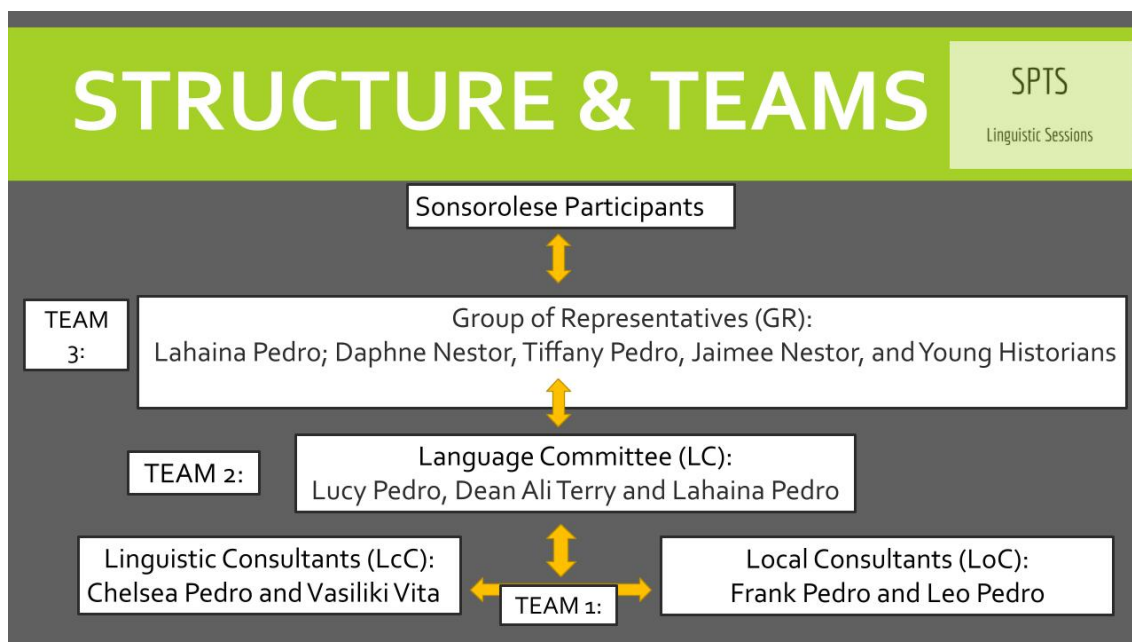


Figure 3. Project workflow⁵

2.2. Detailed steps and responsibilities

2.2.1. Linguistic and Local Consultants

Vasiliki Vita and Chelsea Pedro will function as consultants (Linguistic Consultants, LcCs) throughout the project. This means that they will work with two individuals, namely the Local Consultants (henceforth LoCs), to prepare the surveys. These individuals will be provided with a consent form explaining the purposes of the project, their tasks and how their data will be handled. An LoC could⁶ be an individual that is recognised as a fluent speaker of the language and is trusted by the community.

The responsibilities of the LcCs include various steps. Before distributing, they are asked to work with the LoCs to create the surveys, pilot them and review the feedback by making any necessary changes. After distributing, they will have to analyse the results, propose solutions and discuss them with the LoCs and the LC. The responsibilities of LoCs include the provision of recordings of the vocabulary or text required for the preparation of the survey, assistance with demonstrating the differences between similar sounds, provision of possible expected writings of the vocabulary contained in the survey and evaluation of the survey drafts.

2.2.2. The Language Committee

After discussions with the collaborators, the LC will be composed of three speakers of Sonsorolese. The aim is for this committee to continue working on making decisions related to the language after the end of the particular project. The recommended individuals joining this committee are as follows:

⁵ Thank you to Lincy Lee Marino for preparing this diagram as part of the Linguistic Sessions outreach event by the Young Historians of Sonsorol in July 2021.

⁶ We would rather say ‘could’ than ‘should’ here because we have also consulted a speaker who is not traditionally fluent but whose insights have been accepted by the rest of the collaborators. By including a young speaker who mixes the languages of their repertoire, we hope to further engage young people in language work and promote an atmosphere of acceptance.

- A local leader to function as a bridge between this volunteer initiative and the state
- An individual who is recognised as a fluent speaker of the language and/or an education specialist and/or a teacher
- A young individual, aged 20-40, who identifies as a speaker of the language

The purpose of including a young individual is to encourage them to participate in decision making but also learning and experiencing how language decisions in the future are/can be made (see also footnote 4).

The responsibilities of the LC include various steps. Before distributing the survey, they are asked to function as the piloting group for the surveys and provide feedback and recommendations. They are also asked to distribute the final draft of the surveys to the GRs and assist them with any issues that might arise. Finally, after the analysis of the results by the LcC and GRs, they will be asked to review the findings, provide feedback on the recommendations of the LcC and GRs, announce the results, collect participant feedback from the GRs and work together with LcC and GRs to finalise the orthography.

2.2.3. The Group of Representatives

The creation of a Sonsorolese Group of Representatives (GRs) aims at assisting the Language Committee with distributing the surveys to the participating speakers. This group will be composed of three individuals. Since these individuals will oversee distributing the surveys, it is recommended for young people who identify as speakers of the language to join this group.

The responsibilities of the GRs include various steps. Before distributing, they are asked to provide feedback and recommendations to the LC and prepare a promotion strategy to inform participants (see Figure 2). During distributing the final draft of the surveys to the participants, they are asked to handle participant interaction and questions/concerns that might arise. After distributing, they collect the answers and report participant feedback and assist with the analysis of results. After the results have been announced by the LC, they collect participant feedback and report to the LC.

2.3. The survey

The survey⁷ aims at gaining input from speakers on how they wish to write, or already write, Sonsorolese. The survey is divided into three parts. In the first part, speakers are asked about their language practices, how they would use the writing system and who they think is the appropriate individuals/organisations/other to decide on a standard writing system. The reason for including this part is to discover how speakers think of their language and how they could potentially use the writing system. If the responses in this first part of the survey do not showcase an interest in furthering work on the language and extend the social contexts in which it could be used, we as linguistic consultants will not push this project forward.

⁷ Find a draft of the survey, here: <https://forms.gle/oXuwW82EASH5VYVUA>

In the second part of the survey, speakers are asked to listen to particular words. Some of these words were selected based on the existing linguistic analyses of the language (Capell 1969; van den Berg 2014). Others were selected based on questionnaires created by consulting Frank Pedro, the main LoC, and recommendations for other languages of the area, such as Woleaian and Saipan Carolinian (Sohn & Tawerilmang 1976; Sohn 1984; Jackson 1984). The reason for including this part is to identify how the majority of speakers would spell each sound of the language and take that into account when making final decisions. We wish to make these results public at the end of the project so that speakers are aware of how the majority has chosen to spell each sound and the reasons behind our recommendations.

In the third part of the survey, speakers are asked to listen to an audio recording in van den Berg's (2013) collection of Rayme Ierago telling the bird story⁸ and write what they are listening to. Although this will make the survey longer, we believe that this is an interesting story that will encourage participants to consider ways of spelling the various sounds and words of Sonsorolese. The main reason for including this task is to be able to compare participants and identify again how the majority spells, particularly, subject markers and other proclitics. Furthermore, the fact that the majority of the Sonsorolese-speaking population is literate makes this an ideal introductory task for future literacy projects.

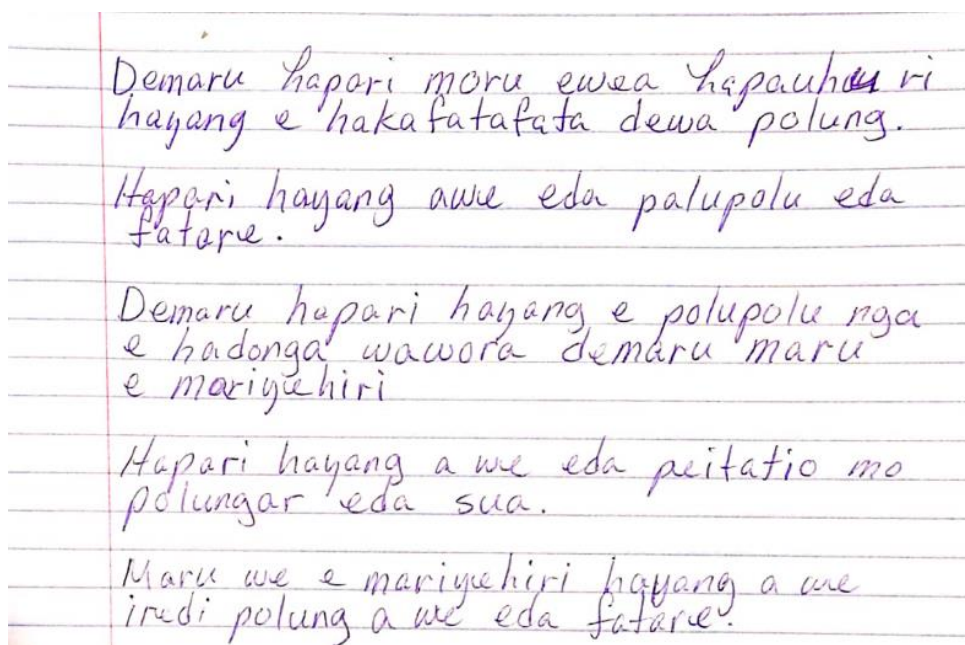


Figure 4. Frank Pedro's writing of Rayme's bird story

In February 2021, we held four sessions in total with Frank Pedro via Zoom. The purpose of these sessions was to prepare the survey, test our hypotheses, choose the appropriate vocabulary to be included in the survey and gain some initial input on how speakers of Sonsorolese think about their language. Zoom was used because of the possibility of recording the sessions,⁹ of sharing one's screen and of having multiple participants on

⁸ Find the recording here: <https://scholarspace.manoa.hawaii.edu/handle/10125/32511>

⁹ Find all sessions:

screen at the same time. Sessions were conducted using a questionnaire,¹⁰ while Frank Pedro has signed a consent form¹¹ regarding revealing his name in all documentation of the project, making the recordings available and using his insights and productions for the purposes of preparing these surveys.

Currently the survey is in online format, that is, Google Forms. The Sponsorol Language Committee (LC) functioned as the focus group, testing the survey which was finalized after the pilot group identified potential problems and made recommendations. Once the survey was finalized, the online format was used for expatriate speakers of the Sponsorolese community, and the survey was transformed into a printed version for speakers who live in Palau. In the online format, the audio files are embedded, while in the printed version the GRs played the audio files of each word for part two and the story file for part three during the events (see Figure 2). A list of potential participants had been prepared ahead of time.

2.4. Proposed analysis

After collecting the surveys, the findings will be analysed based on the sound system of the language. The words, phrases and texts included in the survey aim at identifying specific sounds and phonological rules. Since both Vasiliki Vita and Chelsea Pedro are recent graduates and, as mentioned before, the phonological descriptions of the languages include Capell's (1969) grammar and van den Berg's (2014) linguistic sketch, the data we gathered are based on such earlier analyses of the language, we are either confirming or debunking their analyses using their wordlists (primarily van den Berg 2014) or the questionnaire (see footnote 8) we have prepared using examples found in Oda's (1977) phonology chapter of Pulo Annian, a related variety, and Sohn (1984).

Google Form's auto-generated spreadsheet with the survey results will be used for the analysis of the findings. In effect, under each word or sentence that speakers are asked to transcribe, the investigated sound (vowel, consonant or diphthong), will be inserted in a column under the word and then the LcCs and selected members of the GRs will assist in counting the answers. Community members and volunteers were presented with the sounds of Sponsorolese, from a linguistic point of view, during the events (see Figure 2). That is, the LcCs prepared a presentation of the linguistic analysis that is also presented in this paper, accommodating linguistic terminology and examples (such as phonology and phonetics, orthography, scripts and alphabets, the IPA, its symbols and uses, single and geminate consonants, single and long vowels, diphthongs, diacritics and digraphs) to ones that are appropriate for the audience.

RStudio (R Core Team 2013) will be used for the final presentation of the results. RStudio is a programming language used for statistics and statistical data visualisation. The benefits are that it will allow the graphing of the survey results making it more

<https://drive.google.com/drive/folders/13tcrmKQsn38cooGSTYS4agR82SQFzYUj?usp=sharing>

¹⁰ The questionnaire is a combination of examples used in Oda's (1977) phonology chapter and Sohn's papers in Bender's (1984) *Studies in Micronesian Linguistics*. Find the questionnaire below:

<https://drive.google.com/file/d/1gK2qRxMtsi-odi-c0s62Js20USOIPOfI/view?usp=sharing>

¹¹ Find the original consent form here:

<https://docs.google.com/document/d/1vVRqLrj2L6WJcOwtbMMUw5nlzLhbWop3AGkDVMB2fJg/edit?usp=sharing>

understandable for our collaborators and allowing its use in official statistical documents of the state. Some preliminary conditions (to be revised according to LC and GRs' recommendations as we move forward):

- If the majority of participants agree on a specific letter for a sound, then that letter will be used.
- If it is 50-50 between two letters for the same sound, then the LcCs and the LC will make recommendations for the particular sound.
- If the participants decide on a symbol or letter that the LcCs would not recommend, then this will be discussed in a community meeting to reach a consensus.

3. The sounds of Sonsorolese

As mentioned earlier, the analyses and the vocabulary used for them are based on earlier work done by van den Berg (2014) and Capell (1969). In this analysis, we have merely described the sounds in more detail and confirmed or debunked previous claims.

3.1. The vowels

As far as vowels are concerned, we agree with van den Berg (2014: 14) that there are seven main vowels in Sonsorolese. Most of these vowels also occur as long vowels.

Table 1: Sonsorolese main vowels

IPA	word (translation)
i	/i:tẽ/ (name)
u	/b ^y u:ŋũ/ (flower)
ʊ	/ŋu:ŋũ/ (chew)
ɛ	/m:ɛ:tɛ/ (what)
ə	/xəyə-/ (tie up)
o	/xosou/ (rain cloud)
ɐ	/xɐm ^y ɐsũ/ (grab)

The first vowel is /i/, which is pronounced with the tongue in the front of the mouth, as in the Sonsorolese word for 'name', /i:tẽ/ and English 'see'.¹² The next vowel is /u/, which is pronounced with the tongue in the back of the mouth, as in the Sonsorolese word for 'flower', /b^yu:ŋũ/ and General American English 'fruit', while the third one is a vowel that is pronounced with the tongue in the centre of the mouth /ʊ/, as in the Sonsorolese word for 'chew', /ŋu:ŋũ/. The fourth main vowel is /ɛ/, which is pronounced with the tongue in the near front of the mouth and only one of the lips open, that is, the upper lip is covering the teeth, as in the Sonsorolese word for 'what', /mɛ:tɛ/ and English 'head'. The next sound is /o/, as in the Sonsorolese word for 'rain cloud', /xosou/, which is pronounced with the tongue in the back of the mouth and the lips in a near neutral position.

The schwa /ə/ is the next phoneme, which is pronounced with the tongue in the centre of the mouth and the lips in mid positions, meaning that they are not fully open or closed,

¹² Find all audio files here:

<https://drive.google.com/drive/folders/1mk4EcZ4cRB7j68KvM23t0csCVOcZSo0N?usp=sharing>

rather in a neutral position, as in the Sonsorolese word for ‘tie-up, fasten’, /xəʎə-/ and the first vowel in the English word ‘again’. Van den Berg (2014: 15–16) argues that /ə/ may not in fact be phonemic but rather an allophone of another phoneme because native speakers seem unaware of the particularity of this sound in stressed positions (its spelling varies between ‘a’ and ‘o’) and because vowels are regularly reduced in running speech. However, we would argue that /ə/ is phonemic because even in careful speech speakers pronounce the /ə/ in /xəʎə-/ (tie up), the same example van den Berg (2014: 16) used. In contrast, a word used by older speakers when addressing children in Sonsorolese seems to be /xəʎə/, while /ɣ¹ɛɣ¹ɛ-/ means ‘to saw, to cut something’ and /xoʎo/ means ‘to use something’.

Finally, the vowel sound /ɐ/ is pronounced with the tongue in the centre of the mouth and the lips near open, as in the Sonsorolese word for ‘grab’, /xəm^ɥɛsũ/ and Australian English for ‘calm’. There is variation as far as /ɐ/ is concerned. As van den Berg (2014: 16) notes, in many cases it is pronounced in the centre of the mouth, as in ‘palm’, especially when in open syllables and monosyllabic words, such as the Sonsorolese word for ‘eye’, /ma:t/, while when a low vowel is followed by either /i/ or /e/, it occurs as /æ/. Evidence for this explanation of /æ/ comes from Woleaian, for which a rule exists which states that /ɐ/ is raised before /i/, /e/ and /a/ (Sohn & Tawerilmang 1976: 18), yet we were not able to confirm it.

As far as the short final vowels are concerned, we have identified four (Table 2). As van den Berg (2014: 17) notes /ə/ does not appear in word-final position.

Table 2: Short final vowels

IPA	word (translation)
ĩ	/pĩrisĩ/ (dog)
ũ	/ŋɯ:ŋũ/ (chew)
õ	/ɛ-mʋoxõ/ (it-good)
ẽ	/i:tẽ/ (name)

Finally, seven diphthongs have been identified (Table 3). Similar diphthongs have been identified in van den Berg (2014: 17), apart from /eo/, /vo/ and /vɯ/, with the last being described as a VCV-sequence ‘vɯũ’. However, we argue here that /vɯ/ is a diphthong, as this sequence is not evident in /fɯw^v/ (four). Furthermore, /vo/ is also described in Capell (1969: 8).

Table 3. Diphthongs

IPA	Description	word (translation)
ɛi	a combination of /ɛ/ and /i/	/feite/, (to do/how)
ou	a combination of /o/ and /u/	/b ^ɥ uwou/, (to go out)
ɛo	a combination of /ɛ/ and /o/	/ðɛow/, (one)
ɛɛ	a combination of /ɛ/ and /ɛ/	/jɛwɛɛɣ ¹ /, (their mouths)
vɯ	a combination of /v/ and /ɯ/	/fɯw ^v / (four)
vo	a combination of /v/ and /o/	/e-ða-p:vo-:/ (it-TAM-pound-OBJ)

3.2. The consonants

Sixteen single consonants and six geminates have been identified for Sonsorolese, which correspond to a great degree to the ones identified by van den Berg (2014: 18).

Table 4. Consonants

IPA	Description	word (translation)
p	voiceless bilabial plosive	/p̥irisĩ/ (dog)
p ^y	voiceless velarised bilabial plosive	/x̥ep ^y esi/ (heat up)
b ^y	voiced velarised, bilabial plosive	/b ^y u:ŋũ/ (flower)
m	voiced bilabial nasal	/ma:rũ/ (animal)
m ^y	voiced velarised, bilabial nasal	/m ^y e:rə/ (man)
ŋ	voiced velar nasal	/ŋu:ŋũ/ (to chew)
f	voiceless labio-dental fricative	/f̥euwě/ (four)
x	voiceless velar fricative	/xu:b ^y e/ (leg)
r	voiced alveolar tap	/u:rũ/ (to drink)
w	voiced labial-velar approximant	/w̥eūtũ/ (to hit)
j	voiced palatal fricative	/j̥e:wě/ (mouth)
s	voiceless dento-alveolar fricative	/si:m ^y / (head)
t	voiceless dento-alveolar plosive	/ta:ŋi/ (to cry)
ð	voiced dental fricative	/ðu:xi/ (to open)
k	voiceless velar plosive	/k̥ek:ɛnɛ/ (to see)
ɣ ^l	voiced lateral-fricativised velar	/j̥ɛfɛɣ ^l / (shoulder)

Oda (1977: 18) mentions that bilabials can be velarised and rounded in Pulo Annian and this is how van den Berg (2014: 19) also described them, thus the same occurs with /b^y/ in /b^yu:ŋũ/, ‘flower’. Yet, this has not been confirmed for the rest of the bilabial consonants. As far as /ɣ^l/ is concerned, van den Berg (2014: 19–20) mentions that it functions as the correspondent /x/ in Tobian. Although this may be true for certain examples, it could be argued that both sounds exist in Sonsorolese and are used independently. Although we have described this consonant as voiced, it is worth noting that because of the fricativisation, at certain points, it comes out as devoiced. As far as an alveolar nasal, /n/, is concerned, van den Berg (2014: 22) does not describe it as phonemic, and we would agree with this analysis by arguing that /n/ emerges after tap deletion (see Section 4). Nevertheless, this is still preliminary, and there are certain examples, such as /n̥ewɛr/, ‘no’, inhibiting us from making any conclusive remarks.

Table 5. Geminate consonants

IPA	word (translation)	IPA	word (translation)
m:	/m:ɛ:t̥/ (what)	m	/m̥e:ɣũ/ (animal)
s:	/s:ɐ/ (blood)	s	/si:m ^y / (head)
ŋ:	/ŋ:v̥ðě/ (to breathe)	ŋ	/ŋu:ŋũ/ (to chew)
k:	/k:ɛŋi/ (sharp)	k	/k̥ek:ɛnɛ/ (to see)
f:	/f:ɛxi/ (offering)	f	/f̥iteɣ/ (to work)
t:	/t:v̥rě/ (to dream)	t	/ta:ŋi/ (to cry)

Regarding geminate consonants, and particularly the geminate /p:/, it seems that it appears under certain conditions. For example, in /pao/, ‘to pound’, there is a single /p/,

as well as in /pi:jě/, ‘sand’. Yet, in /eđap:ao:/, ‘he then pounded it’, there is a geminate /p:/. It should be noted that it is strange for the word /pao/ to be pronounced on its own without any proclitics or object markers, thus further investigation is needed. As far as the rest of the geminate consonants are concerned, they appear most often in word-initial position and precede the near front /ɛ/ and the central /ɐ/ (Table 5). In comparison, vowels which occur in word-initial position are usually lengthened when pronounced on their own (van den Berg 2014; Vita 2020), thus something similar might be occurring in the case of certain consonants as well. For this reason, the next steps would be to investigate their occurrence mid-speech and words in which they precede different vowels than the near front /ɛ/ and the central /ɐ/.

Van den Berg (2014: 20) also notes that geminate forms are the results of morphological processes. For example, when a verb begins with /x/ and needs to be reduplicated, it might result in a sequence of /x/ + V + /x/, where the vowel disappears leading to the emergence of [k]. However, we were not able to confirm this.

4. Phonological rules

As far as the phonological rules of Sonsorolese are concerned, it seems that the language follows the patterns of other languages of the area, in particular, Pulo Annian and Woleaian. As mentioned before, our analysis is based on a questionnaire prepared based on Oda’s (1977) analysis of the syntax of Pulo Annian, as well as Sohn’s (1984) *An orthographic design for Woleaian*, and Sohn & Tawerilmang’s (1976) *Woleaian-English Dictionary*.

4.1. High Front vowel lowering

The first vowel of the first person singular object marker suffix /-ai/ (van den Berg 2014: 37) becomes [ɛ] after a stem-final /ɐ/ (1). In (2), the central rounded /ɯ/ is elongated because of the addition of the suffix, which resurfaces the devoiced vowel (see Section 4.6), assimilating into a high back rounded vowel /u/.¹³

- | | | | | | | |
|-----|----|---------|----|------------------|---|-----------------------|
| (1) | a. | /fɛđě/ | b. | /xɐ-fɛđě-ai/ | → | [xɛfɛđɛjɛ] |
| | | live | | TR-birth-1SG.OBJ | | ‘to give birth to me’ |
| (2) | a. | /wautɯ/ | b. | /wautu-ai/ | → | [wautu] |
| | | hit | | hit-1SG.OBJ | | ‘to hit me’ |

Van den Berg (2014: 32) also notes certain stem-dependent rules too, such as, final /ɐ/ becoming /ɛ/ before /-i/, as in (3), final /ɐ/ becoming /o/ before /-m^wu/, as in (4) and final /ɯ/ becoming /u/ before /-m^yu/, as in (5).

- | | | | | |
|-----|----|------------------------|----|--------------------------------------|
| (3) | a. | /ruma-i/ | b. | [rumɛi] |
| | | drink-1SG.POSS | | ‘my drink’ |
| (4) | a. | /i:m ^y ě-m/ | b. | [i:m ^y om ^w u] |
| | | house-2SG.POSS | | ‘your house’ |

¹³ Abbreviations in all examples follow the Leipzig Glossing Rules.

- (5) a. /rɛǔ-m/ child-2SG.POSS b. [rɛum^ɥǔ] ‘your child’

4.2. Glide Epenthesis

The palatal glide /j/ is inserted between identical unrounded vowels (7, 8), and between an unrounded vowel and any vowel (6). In (6), both glide epenthesis and high front vowel lowering are present. Examples (9) and (10) with rounded vowels show when this rule does not occur.

- (6) a. /fɛðǔ/ live b. /xɛ-fɛðǔ-ai/ → [xɛfɛðɛjɛi] TR-live-1SG.OBJ ‘to give birth to me’
- (7) a. /fiteɣǔ/ build b. /fiteɣǔ-(i)¹⁴ → [fiteji:]¹⁵ build-3SG.OBJ ‘to build it’
- (8) a. /wɛxitɛxǔ/ turn b. /wɛxitɛxǔ-(i)/ → [wɛxitij] turn-3SG.OBJ ‘to turn it’
- (9) a. /ŋu:ŋǔ/ chew (without swallowing) b. /ŋu:ŋǔ-(i)/ → [ŋu:tɔ] chew-3SG.OBJ ‘to chew it’
- (10) a. /u:rǔ/ drink b. /u:rǔ-(i)/ → [urumi] drink-3SG.OBJ ‘to drink it’

The labio-velar /w/ is inserted between non identical vowels, one of which is rounded, as in example (11), provided the second vowel is not high, as in example (12) where a glide is not inserted.

- (11) a. /tou/ poke b. /tou-(i)/ → [towu] poke-3SG.OBJ ‘to poke it’
- (12) a. /ɣ¹oŋoɣ¹oŋǔ/ hear b. /ɣ¹oŋoɣ¹oŋǔ-i/ → [ɣ¹oŋoɣ¹oŋo] hear-3SG.OBJ ‘to hear it’

4.3 Diphthongization before suffixes

When the third person plural possessive suffix is preceded by the high front vowel /i/ or the near-low central vowel /ɛ/, it turns into a diphthong (13, 14, 15). Van den Berg (2014: 32) describes it as an insertion of either /i/ or /ɛ/. However, in the cases we have observed so far it has been manifested as /ɛ/. Examples (16) to (18) show that with the central rounded /ǔ/ in final position in the stem, the same diphthongization does not occur.

- (13) a. /jɛ:wǔ/ mouth b. /jɛ:wǔ-ɣ¹ɛ/ → [jɛwɛɣ¹] mouth-3PL.POSS ‘their mouth’

¹⁴ Van den Berg (2014: 37) describes the 3rd person singular object marker suffix as -ja, -wa or null but we think that it is -i or null. Since we are still uncertain, we present it in parenthesis.

¹⁵ This is how the speaker pronounced it during the elicitation session. It is not usually elongated.

(14)	a.	/jɛrɛrixɛr/	b.	/jɛrɛrixɛr-ɣ ¹ ɐ/	→	[jɛrɛrixɛrɛɣ ¹]
		tongue		tongue-3PL.POSS		‘their tongue’
(15)	a.	/ðirɛðir/	b.	/ðirɛðir-ɣ ¹ ɐ/	→	[ði:rɛɣ ¹]
		mother		mother-3PL.POSS		‘their mother’
(16)	a.	/xumɣusǎ/	b.	/xumɣusǎ-ɣ ¹ ɐ/	→	[xumɣusɯɣ ¹]
		hand		hand-3PL.POSS		‘their hands’
(17)	a.	/taɣ ¹ uxǎ/	b.	/taɣ ¹ uxǎ-ɣ ¹ ɐ/	→	[taɣ ¹ uxɯɣ ¹]
		back		back-3PL.POSS		‘their back’
(18)	a.	/fɛðuxǎ/	b.	/fɛðuxǎ-ɣ ¹ ɐ/	→	[fɛðuxɯɣ ¹]
		head		head-3PL.POSS		‘their head’

4.4. Tap nasalization

The voiced alveolar flap /r/ becomes an alveolar nasal /n/ when the suffix starts with /r/. Thus, this rule applies to a noun ending in /rV/ when it is followed by a construct suffix, /-ri/ ‘of’ (19), a possessive suffix /-ra/ (21), or a demonstrative /ra/ (23), but not in examples (20), (22) and (24). The /r/ of the suffix is not retained. Thus, two adjacent taps are pronounced as a long nasal, /rr/ → [n:]. It could be argued that the nasal here the realization of a geminate rhotic tap.¹⁶ The final vowels /i/ and /a/ are sometimes deleted (see section 4.6).

(19)	/m ^y ɛrǐ-ri ðoŋosarǔ/	→	[m ^y ɛn:i ðoŋosarǔ]
	man-of Sonsorol		‘a man from Sonsorol’
(20)	/sɛo-ri pənəu/	→	[səwɛr pənəu]
	person-of Palau		‘a person from Palau’
(21)	/ðirɛðir-ra/	→	[ði:n:ɛ] ¹⁷
	mother-3SG.POSS		‘her mother’
(22)	/u:fǐ-ri fɛifir-rɐ/	→	[ufɛr fɛifinɐ]
	clothes-of girl-DEM		‘that girl’s clothes’
(23)	/m ^y ɛrǐ-ra/	→	[m ^y ɛn:ɐ]
	man-DEM		‘that man there’
(24)	/riwɛis-ra/	→	[riwɛisrɐ]
	child-DEM		‘that kid’

4.5. High vowel rounding/backing before glide

As van den Berg (2014: 31) notes, the construct suffix /-ri/ ‘of’ is pronounced [ru] when it appears before /w/, with /r/ once again becoming /n/ as in (25).

¹⁶ It is important to note that we do not yet have any conclusive remarks about the nature of /n/ in general.

¹⁷ The vowel is lengthened because of careful speech.

- (25) /m^yɛr^l-ri wɔrɛjɛi/ → [m^yɛn:u wɔrɛjɛi]
 man-of Woleai ‘man from Woleai’
- (26) /mumu-ri wɛirɛŋ/ → [mumu ru wɛirɛŋ]
 kingdom-of heaven ‘the kingdom of heaven’

4.6. Final vowel devoicing

Van den Berg (2014: 13) notes that possibly Chuukic words ended in vowels. However, with the passage of time, many dialects have shortened long vowels and/or reduced short unstressed vowels, leading to either them becoming voiceless or disappearing completely. We argue here that Sonsorolese is doing both, with final devoicing happening after a rounded vowel and at a phrase boundary. The degree of devoicing seems to vary depending on the degree of stress or carefulness given by the speaker. The so-called ‘devoiced’ vowel may be half-voiced or whispered or is not phonated although the speech organs are set in position for articulation of the vowel. A simple vowel following a consonant or glide is devoiced before a phrase boundary (27). Voiceless word-final vowels are sensitive to the sound environment, if a word follows them closely, they become voiced (28).

- (27) η:ɛor ɣɛpəriɛr^yi wuor **fɛyuyur**
 η:ɛ-or ɣɛpəriɛr^yi wuor **fɛyuyu-ri**
 CONJ-DEM small.bird on.top.of **head-of**
 ‘and there was a baby bird on it’
- (28) **ufɛr** fɛifine
u:fɛ-ri fɛifir-rɛ
 clothes-of girl-DEM
 ‘that girl’s clothes’

Although this may seem like a low-level, postlexical rule, final vowels are important to remember because they dictate which vowel to use when adding a suffix. Thus, it would be good practice to spell them out in order for people to remember them. This is one of the main issues with literacy in Sonsorolese and Tobian. Speakers might not remember the final devoiced vowel and/or are not sure how to spell these usually short final vowels when writing the word with a suffix.

4.7. Low vowel raising and fronting

A single low vowel, /ɐ/, is fronted and raised to /ɛ/ between two high unrounded vowels /i/, /ɪ/ (31).

- (29) a. /jɛfɛy^lɛ/ b. /jɛfɛy^lɛ-ri/ → [jɛfɛy^lɛri]
 shoulder shoulder-of ‘shoulder of’
- (30) a. /jɛfɛy^lɛ/ b. /jɛfɛy^lɛ-r/ → [jɛfɛy^lɛr]
 shoulder shoulder-3SG.POSS ‘his shoulder’

- (31) a. /i:m^yǔ/ b. /im^yǔ-ri/ → [im^yɛri]
house house of ‘house of’
- (32) a. /i:m^yǔ/ b. /i:m^yǔ-r/ → [im^yɛr]
house house-3SG.OBJ ‘his house’

4.8. Vowel rounding and/or backing

An unrounded vowel /i/, /ɪ/, /ɛ/, /ɐ/ becomes rounded when followed by a rounded vowel (33, 34, 35). With the resurfacing (see Section 4.6) of the underlying vowel /ǔ/ because of the addition of the suffix /-ri/, in (33), the unrounded vowel /i/ becomes /u/. In (35) it is not just rounding that is present, but also monophthongisation with the diphthong /εo/ being deleted completely and the back rounded vowel /o/ emerging.

- (33) a. /jɛriðǔ/ b. /jɛriðǔ-ri/ → [jɛruðɛri]
ghost ghost-of¹⁸ ‘ghost of’
- (34) /b^yi-wow/ → [b^yuwou]
go-out ‘to go out’
- (35) /ðεow-b^yoŋǔ/ → [ðob^yoŋɪ]
one-night ‘one night’

Van den Berg (2014: 27) also notes that /ɛ/ becomes /ə/ before /ʌ/ if it is followed by /-uwɐ/ (36).

- (36) /ðɛy^li-uwɐ/ → [ðəru:wɐ]
one-two ‘three’

5. Proposed orthographic design

As Rehg (2004: 510) describes the stages of standardization, it could be argued that Sonsorolese is at stage 3, where the speakers employ writing for a variety of functions but there is no widespread agreement concerning how words should be spelled or what letters to use. For this reason, we are focusing on surveys and tallies to count what the majority is using. Regardless, we have certain recommendations. Although Rehg (2004: 507) does not recommend diacritics, we believe that they would be useful in order to remain accurate and represent the differences between single and long vowels and consonants.

Thus, we recommend using the macron above the letter, as in ā, to signify long vowels and geminate consonants. Since the Bible Translation team is using the umlaut, if it comes up in the survey answers we would be willing to recommend it instead of the macron. Next we recommend using the circumflex above vowels, as in â, to signify central vowels like the schwa, /ʌ/ and devoiced vowels at the end of the word. If a central vowel that already has a circumflex is long then we would recommend using the umlaut to signify the fact that this vowel is not only central but also long, as in /ɲʌ:ŋ^u/ ‘chew’, ngüŋgü. Subject markers and other proclitics are recommended to be written separately from the

¹⁸ Used only for objects, not people.

main verb phrase, while suffixes are recommended to be conjoined at the end of the word. When writing a dictionary, it is recommended to always include the devoiced vowel at the end of the word.

Table 6. Proposed Alphabet for Sonsorolese

IPA	Orthography	IPA	Orthography
p	p	i	i
p ^y	pw	u	u
b ^y	bw	ɯ	û
m	m	ɛ	e
m ^y	mw	ə	ê
ŋ	ng	o	o
f	f	ɸ	a
x	h	ɨ	î
r	r	ɯ	û
w	w	ɸ	â
j	y	ə	ê
s	s	ɸi	ai
t	t	ɸi	ei
ð	d	oɯ	oû
k	k	ɛo	eo
ɣ ^l	ghl	ɸɛ	ae
m:	m̄	ɸu	au
s:	s̄	ɸo	ao
ŋ:	ṅ̄		
k:	k̄		
f:	f̄		
t:	t̄		

In effect, we propose the use of three diacritics:

- The macron (̄) for long vowels and geminates
- The circumflex (̂) for central and final vowels
- The umlaut (¨) for central long vowels

Our reasons for choosing diacritics rather than digraphs are various. First of all, it could be argued that digraphs have not been widely accepted in Micronesia and although people may be using them there are many cases of communities wishing for a revised version of their grammar or dictionary (Taborosi Danko, personal communication, November 26, 2019). In fact, this is reasonable considering how largely spoken languages like French and Greek have committees deciding on the orthography and revisions of it at certain points in time. Consider, for example, the case of double σ for κλασσικός, ‘classic’, in Greek, which was transformed into κλασικός in 1976 when it was postulated for loan words in Greek to be written in a simpler manner (Saradakos 2018).

Furthermore, diacritics have already been introduced to the communities through the Bible translation teams’ work and, from communication with the SIL linguist, they have

been well-received (Paulus Kieviet, personal communication, January 6 2021). In addition, if diacritics are not used speakers will have to deal with an alphabet of more than 30 letters in order to be phonetically accurate. Although Rehg (2004: 506) points out that one should be sure about the phonology of the language before diving into a design of orthography for it, this contradicts with choosing underspecification. We posit that it would be better to use diacritics than digraphs for matters of economy. Diacritics would make the letters look closer to what people are already using and make them seem more special, differentiating from Palauan and English. The main goal would be to create an alphabet that is easy and comfortable for both readers and writers, while preserving unique linguistic features.

Moreover, suggesting diacritics could also reveal attitudes and ideologies towards various languages that exist in their immediate environment. Many of the indigenous languages in the Pacific are seeing a renaissance, meaning they are receiving attention and support from state authorities. Those closest to Micronesia are Hawaiian and Māori, both of them using diacritics. Perhaps by choosing diacritics the Sonsorolese might see it as aligning themselves with Hawaii and the Hawaiian renaissance, a common destination for education and immigration, or by not choosing to use diacritics they align with the rest of Micronesian nations. After all, Rehg (2004: 515) mentioned an incident where Micronesians showed admiration toward Waikīkī. Although this admiration was interpreted as being towards English as a key element for societal development, perhaps this admiration could shift towards Hawaiian after Micronesians become introduced to the efforts of the Hawaiian revitalisation movement. Either way, through this survey and our next steps we hope to build on existing practices and make recommendations accordingly.

Finally, it is important to remember that this is a preliminary design that will become final after speakers allow it and after consulting with the Language Committee and Group Representatives. We have no intention of implementing the recommendations presented in this paper without the consent of the speakers, and this is evident by the fact that we introduce diacritics in the third part of the survey asking speakers how they would feel about them. During the workshops about the linguistic aspects of the language, diacritics and their use were also introduced as part of terminology rather than as one of our recommendations. That way, we hope to encourage speakers to consider beforehand on their own the various ways that their language could be written.

6. Applications

The desired outcome of the project described in this paper would be a standardised orthography for the variety of Sonsorol that will be used by community members in education, administration and local life. This desired outcome could then lead to community involvement in the documentation of Sonsorolese and the subsequent use of this material for the development of teaching materials which could be important in showcasing how this writing system could be applied in real-life contexts.

This next phase of the project includes a documentation project with revitalisation in mind (Sugita 2007; Amery 2009; Nathan & Fang 2009). That is, a collection of audio and video materials comprising both linguistic and paralinguistic data of culturally specific practices (such as fishing and canoe building), as well as recordings of naturally occurring

conversations in everyday life, are proposed. Members of the team will be trained in collecting metadata so that they can continue the work of archiving material for posterity with all materials described using the agreed-upon writing system.

Based on the literature (Rehg 2004; Jones & Mooney 2017; Casquite & Young 2017), collaboration between LcC, LC and educators will be required. These educators need to have a high level of fluency in the target language and be able to write in English, Palauan or both. Following Mosel (2011), small theme-based dictionaries using WeSay (2020) are proposed. Its primary distinction from other software is that "it has been specifically designed for relatively unskilled native speakers of under-resourced languages, empowering them to be active contributors and creators of dictionaries" (Albright & Hatton 2007: 192). By combining recordings and the aforementioned dictionaries, the goal would be to create a corpus as a resource to be used for future work as well as an online database available to researchers and members of local and expatriate communities.

Despite the fact that monolingual dictionaries have been suggested by the community, most young speakers are semi-speakers and might be discouraged by a monolingual dictionary. Sponsorolese-English dictionaries are, thus, proposed, since English has high status, with varieties of English emerging among the youth, like Palauan English and Echangese. Naturally occurring language conversations and recordings from elicitation sessions collected for the purposes of creating the multimodal documentation mentioned before could be used for the production of a pedagogical grammar.

Finally, although the transference of ESL practices is not recommended for teaching endangered languages (Hinton 2011; Penfield & Tucker 2011) and the languages of Micronesia in particular (Yunick 2000), the accommodation of such techniques in the Sponsorolese context is proposed for various reasons. First, most Sponsorolese, like Tobian, youths have fluency in English and Palauan due to intermarriage and the structure of the education system in Palau (Tibbetts 2002: 10), so they have already reached a degree of literacy. Furthermore, Palau Community College (PCC 2013) offers an Education Program which familiarises potential teachers with lesson planning, integrating technology into teaching and learning, and other techniques. Additionally, by applying a collaborative model for the creation of material, the issues mentioned in Yunick (2000) can be confronted.

7. Conclusion

In conclusion, this paper deals with a project that aims at the production of a standardised orthography for the language of Sponsorol in the Republic of Palau. Although we are facing various issues and limitations, from physical distance, because of inability to travel due to COVID-19 and lack of resources, to bureaucracy and issues of ownership and authenticity, we are slowly and steadily working on building relationships, using the resources available and informing speakers of the possibilities of using the local language in multiple contexts.

Our next steps include the organisation of seminars and workshops. Topics for these workshops include: first, a description of the project and its specific phases and second, the proposed orthography and its linguistic aspects. We recognise that using diacritics in

nowadays' digitally driven world may present certain obstacles for the community, but we are working with young individuals and hope to make this transition easier during these workshops as well.

In effect, the general aim is to acquire a clearer idea of the desires of the Sonsorolese community, how to adapt our workflow and re-evaluate our methodology and goals. By collaborating with local authorities, closing the gap between the domains of language use, which are clearly represented and divided in the Palauan society, and expanding them to official administrative documentation and education seems faster and more legitimate.

Considering Rehg's (2004) recommendations, it seems that it is the people of Micronesia who are responsible for conserving their linguistic heritage. In this case as well, this project hopes to encourage not only the individuals volunteering, but survey participants as well, to consider their language practices. As linguists, our position lies in supporting such efforts and assisting with any knowledge that is relevant. It is the speakers who are ultimately the ones to persevere the global wave of language change and continue using and speaking their languages.

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