

## 11: Participatory orthography development in practice: A workshop with Ma'di Urule in Uganda

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**Abstract:** This case study describes a participatory orthography workshop held with members of the Ma'di Urule [snm] language community in Uganda, also called Southern Ma'di or Ma'di Okollo. The chapter describes the steps of the workshop, adapted from the methodology of Kutsch Lojenga (1996). Throughout the interactive workshop, decisions were primarily made by the participants based on their native speaker intuition with guidance from the linguists, resulting in a community-owned orthography that adequately represents the language. The goal of the case study is to describe the implementation of a participatory workshop from the perspective of a first-time workshop facilitator to order to aid others in planning similar workshops and adapting the methodology to the needs of a particular language community.

**Keywords:** Participatory Research in Linguistics, phonology, language community, native speaker intuition

### 1 Introduction

This chapter describes a participatory orthography workshop for the Ma'di Urule [snm] language spoken in Northwest Uganda, also called Southern Ma'di or Ma'di Okollo. The goal of the workshop was to develop an orthography with an accompanying written guide based on native-speaker intuition and linguistic principles that would be easy for the community to learn to use. The steps and results are described in order to assist other linguists in carrying out similar participatory methods of orthography development.

The two-week workshop was largely based on the orthography development methodology developed by Kutsch Lojenga (1996; this volume) with some modifications as seemed relevant. A significant part of the workshop was spent analyzing tone and word boundaries. In addition to a trial orthography guide (Ma'di Uruléti Language Development Committee 2021), other results of the workshop included an alphabet chart, a wordlist of about 1300 words, and a preliminary phonology sketch (Stølen 2021).

In general, the participatory methodology worked well in this situation. The trained linguists contributed a general knowledge of phonology, grammar, and orthography development, which they shared with the participants as relevant. The community representatives brought their native-speaker intuitions and their experiences of learning and teaching literacy in English, the national language of Uganda, and Lugbara, a neighboring language.

The result was a trial orthography that has community ownership. The new writing rules were written down with examples in an orthography guide. Even more importantly, the interactive nature of the workshop resulted in the participants becoming more aware of the sound patterns and grammar of their language, thereby equipping them as they work to develop it further.

After giving a brief background on the Ma'di Urule language community and orthography situation, I describe the methodology used. Throughout the case study, reflections are included on which parts worked well and which parts could be improved.

## 2 Background

### 2.1 The Ma'di Urule

The Ma'di Urule community lives in the West Nile Region of Northwestern Uganda and call their language Ma'di Uruleti.<sup>1</sup> The most similar language is Lugbara [lɔg]. Other languages in the Moru-Ma'di language family in Uganda include Aringa [luc] and Ma'di North/Moyo/Adjumani [mhi]. Despite having similar names, these communities have different identities and linguistic varieties, and live in different districts.

The Moru-Ma'di languages are part of the Central Sudanic branch of the Nilo-Saharan language family. These languages are characterized by strict CV syllable profiles, 7-9 vowel systems with ATR distinctions, and a high functional load for tone (Kilpatrick 2004).

The population of the Ma'di Urule is about 60,000 (Eberhard et al. 2023). Economic activities include keeping goats and growing various crops. They primarily live in Ma'di Okollo District. Most children attend primary school, and there are also some university graduates in the area. However, educational attainment for rural districts such as Ma'di Okollo is generally lower than for more urban districts. In 2014, about 80% of Uganda's population had completed primary school and about 23% had completed secondary school (Uganda Bureau of Statistics 2016). The main language of instruction is English, which means that the English orthography affects the writing of every other language in Uganda. The government encourages the use of the local language for the first three years of primary school, but this varies widely in actual practice. A common reality is that the teacher, if local, will speak the local language in order to teach English literacy. No textbooks have been available in Ma'di Urule, but at least some schools have used textbooks for the related language Lugbara. A recent revision of the Lugbara orthography introduced two new vowel symbols (i ɥ) and two tone marks (Lugbarati Language Board 2013). Since community members have been exposed to this orthography, the conventions of the Lugbara orthography are also relevant for writing Ma'di Urule.

Over the last several decades, there have been occasional attempts to create written materials, but nothing has emerged as a common standard. Most of these have used five vowels and no tone marks. In 2007, a translation of the book of Luke was started as a collaboration between Ma'di Urule churches and SIL Uganda. This project used an orthography from Ma'di Moyo, despite the fact that the Ma'di Urule have relatively little contact with this community, and that there are significant differences between the two languages. No community testing or literacy training was done. The orthography used nine vowels (with *i e o u* as the additional ones). Only 40 copies of Luke were printed (SIL Uganda, p.c.).

Another attempt at written materials was a set of readers produced by World Vision a few years ago. These were booklets with short stories and illustrations for use in schools, written with an ad-hoc orthography. One of the workshop participants was involved in that project and reported that he found the orthography inadequate.

### 2.2 Workshop context

Orthography development was requested by the community. When a written Bible translation project was started in 2019 by the Ma'di Urule Bible Translation Committee with support from SIL Uganda, it was evident that a better orthography would be needed since the previous

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<sup>1</sup> *Urule* 'upper' refers to the location as being further 'up' the Nile (since the Nile flows from south to north, in compass directions this means 'south'), and *ti* means 'mouth/language'.

orthographies were difficult to read, since vowel and tone contrasts were not adequately marked.

Before the workshop, community leaders were asked to identify six participants. This included the three translators hired for the Bible translation project and three other respected members of the community involved in language development efforts. Several of the workshop participants had experience teaching lower primary school with textbooks in the 2013 Lugbara orthography, and one had previously worked on a project to write Ma'di Urule materials with an ad-hoc orthography. All of the participants had some post-secondary education.

Two linguists from SIL facilitated the workshop. Neither had significant knowledge of any Moru-Ma'di languages, and this was the author's first orthography workshop.

The workshop was held over 11 days in the nearest town to the language area which had a suitable venue, i.e. a meeting room for hire and a hotel with accommodations and meals. Since participants lived in different parts of the district and not all of them had reliable transportation, staying on site allowed the group to consistently work from about 8 am – 5 pm each day, with a break on Sunday.

Materials brought to the workshop included about a thousand small cards of paper (each 1/8 of an A4), blank paper, pencils, erasers, rubber bands, stapler, flip charts, markers, scissors, and several copies of the 1700 SILCAWL wordlist (Snider & Roberts 2004).

### **2.3 Orthography design**

The linguists largely followed the approach to orthography development laid out in Cahill & Rice (2014). The goal was to develop an orthography based on native-speaker intuitions of the language. The result is neither phonemic (“shallow”) nor morphophonemic (“deep”). Native speakers are often aware of lexical processes but not of postlexical processes (Snider 2014). In other words, when people are aware that two words sound differently, it is easier for them to learn to spell those words differently. It can be difficult for outside linguists to know which phonetic differences native speakers are aware of. This is where participatory research is helpful: by asking workshop participants to decide which sounds are the same, the resulting alphabet can correctly group phones together as phonemes and leave out unnecessary surface-level phonetic details. Thus, using native-speaker intuition is central to this methodology.

## **3 Workshop methodology**

The workshop generally followed the methodology developed by Kutsch Lojenga, adapted as necessary. The steps are summarized in the following sections as follows:

- §3.1 Word generation
- §3.2 Sorting by phonemes
- §3.3 Exploring grammar
- §3.4 Word boundaries
- §3.5 Grammatical categories
- §3.6 Draft orthography guide
- §3.7 Post-workshop

The time given for each activity was flexible; each step was adequately completed before moving on to the next one. Each activity is described below.

At the beginning of the workshop, one of the linguists presented the basic principles of orthography design, including the concept of each phoneme being represented with a unique letter, the importance of easy transfer to English, and Smalley's other maxims (Smalley 1959). Other topics were taught throughout the workshop as relevant.

### 3.1 Word generation

Since no work was done ahead of the workshop, the first step was to generate about 800 Ma'di Urule words to work with. Each pair of participants was given a few pages of the 1700 SILCAWL, a stack of cards and pencils. This word list was chosen because of its length, its choice of terms that are culturally relevant across Africa, and its inclusion of different grammatical categories. By selecting several different pages of the word list, a variety of domains were included.

Participants were asked to write the Ma'di Urule word in the middle of the card to the best of their ability, the number from the word list in the upper left corner, the part of speech in the upper right corner, and the English gloss in the lower right corner.

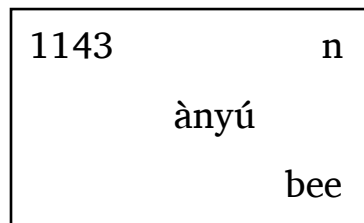


Figure 1: Example Ma'di Urule noun card

For the entire workshop, we were careful to always use pencil, as this enables changes to be made. Some of the participants had learned to use Lugbara tone marks and were able to spell the words initially with tones, but most were unsure of how to write tones at this stage of the workshop. This exercise also helped the participants see ways that the English orthography is inadequate for writing Ma'di Urule.

We found that one challenge in using the 1700 SILCAWL to generate words was the specificity of some of the terms. Ideally, we wanted monomorphemic words, not phrases. But for some of the terms on the list, the most natural translation was to write an entire phrase. For example, for #559, 'facial incisions/tattoos,' the participants wrote *ándreti idetaa*, which was clearly a phrase involving multiple morphemes. We tried to encourage the participants to skip the words that were difficult, but they wanted to do a thorough job by thinking up a word or phrase for each entry on the word list. Another challenge was the length. We did not have time to collect the whole list, so it may have been better to use a shorter list of 600-800 in its entirety.

For generating words for plants and animals, it would have been helpful to bring a picture guide and allow the participants to write down the names for the plants and animals they recognize. This can be a rich lexical area, with many unique words. As it was, by the end of the workshop, we had several words glossed as 'type of bird' or 'type of antelope' because no one knew the correct English gloss. This later created problems such as when some of these words were selected for use in the alphabet booklet and an outside person needed to find illustrations for unknown types of birds.

### 3.2 Sorting by phonemes

About halfway into the second day of the workshop, the participants had written cards for about half of the 1700 SILCAWL, and we decided to move on to the next step. The linguists began by sorting all the words into piles by the first letter of the word. At this point, they also set aside all the cards that had phrases or compound words, since they wanted to begin by looking at morphologically simple words. Rubber bands were useful for keeping the cards sorted.

Based on other related languages, the linguists were fairly certain that the orthography would need to use either 7 or 9 vowels, so they decided to begin with an activity that could establish how many vowels Ma'di Urule distinguishes. They then selected the pile of words with a CV syllable profile where the vowel was <a><sup>2</sup> and asked one of the participants to read them out loud, one at a time. The other participants were tasked with listening carefully and identifying if the vowel in each word was the same or different as in the preceding word.

The participants seemed to hear a difference in the vowels and sorted them into several piles, one for each vowel sound <a> they could hear. However, the linguists soon realized that they were actually sorting by the tones and not by vowel quality. In other words, the functional load of tone was so high that the participants were not able to pay attention to other phonological distinctions.

This led to a modification in the workshop plan: it was clear that tone markings would need to be determined first. Together we practiced identifying high, mid and low tones, and went through each pile of cards together adding the correct tone marks,<sup>3</sup> but did not resort the piles specifically for tone. Whistling the tone patterns was quite helpful for the participants. Because the words were written in pencil, it was easy to erase and make changes. As the participants became more confident, they were able to mark the words without assistance.

After the words were marked for tone, we returned to working on vowel qualities. We were able to establish a difference between “light u” and “heavy u” and “light i” and “heavy i.” After some discussion, it was decided to use the symbols <u> and <i> for the light or [-ATR] vowels. This matches the 2013 orthography revision for Lugbara, the most closely related language, and keeps the symbols <u> and <i> for the heavy or [+ATR] vowels that sound the most similar to the English vowels that everyone learns in school, making transfer easier. Several languages across the border in the Democratic Republic of the Congo also use these barred vowel symbols. Since tones are written using diacritics, using different letters rather than additional diacritics for ATR was desirable so as to avoid stacking.

The linguists were able to identify a slight ATR difference in the mid vowel /o/, but the participants seemed unable to hear this distinction; they sorted all of the cards as having the same vowel sound. No one was able to hear an ATR difference for the mid vowel /e/. Based on this native speaker intuition, we concluded that there was no phonemic ATR distinction in the mid vowels and decided to use 7 vowels in the orthography. Since people are not aware of a difference, they would have to be taught the difference in order to write it, something that would unnecessarily slow the process of learning to read and write in Ma'di Urule.

After working through tones and vowels with a selection of the words, we read through the remaining piles of cards and applied the decisions about light/heavy vowels and tone marks. Then we proceeded to working on consonants. For example, we took all the words

<sup>2</sup> Angle brackets indicate orthographic spelling while slashes indicate phonemic transcription, e.g. the English word /kæt/ is spelled <cat>.

<sup>3</sup> These surface tones appeared to be stable throughout the grammar, with minimal or no interaction with other tones. Representing three tone levels in the orthography is sufficient for reading, but there seems to be at least one additional surface or underlying tone level.

starting with the letter <b>. They read through the pile and listened carefully to the first sound of each word. Some of the words written with a “plain” <b> actually had the “heavy” implosive [ɓ], so these were corrected to the letter <'b>, which is a common way of writing implosives in the area, and added to the pile of words that had originally been written with the letter <'b>. Next we sorted the cards with <b> and <'b> by the surrounding environment and listened again to see if the consonants were affected by the preceding or following vowel. All syllables in Ma'di Urule are V or CV. This meant that we sorted consonants as being word-initial or word-medial, never word-final. There were also no consonant clusters.

As we worked through this process of sorting according to phonemes, we wrote new cards every time a new word came up. This meant the number of words gradually increased, and that not all of the words matched the 1700 SILCAWL. Some of the letters or digraphs, <nz>, for example, only appeared in a handful of words, so while working on those the linguists asked them to try to specifically think of words that had that sound.

One common issue was finding several copies of the same word, often with different spellings. For example, <'bi>, <'bi>, and <bi> showed up on the cards for #1431 ‘shoot (v),’ on #775 ‘hunt’ and on #1246 ‘sprout (v)’. These we solved by asking the participants, “Is this the same word?” When they said yes, we stapled the cards together to keep them together. The final spelling chosen for this word was <'bi>. Here it was helpful to rely on native speaker intuition in order to group different senses of words together correctly. Some words did not seem intuitive to the outside linguists: for example, the verb <ti> can mean ‘set (a trap),’ ‘thatch,’ or ‘negotiate a price.’

Through this process, we were able to establish 39 distinct consonant phonemes. For the most part, the participants chose to use letters already in use by other languages in the area, for example <ny> for /ɲ/ and <'w> for /ʔʷ/. This means the new orthography will be familiar for readers exposed to written materials in other local languages, and was in line with the goal to leverage native speaker intuition about literacy transfer and create ownership to the new alphabet.

A few consonant phonemes required extensive discussion. Both <hw> and <wh> were considered for /hʷ/, and there were even more options considered for /w̄v/, including <wb>, <vw> and <wl>. The linguists offered suggestions and encouraged the primary school teachers to think through which consonant option would be the easiest to teach to children. The final decision was made by the participants, not the linguists. The decision to use the trigraph <wbh> for /w̄v/ may not be linguistically ideal since it is more difficult to read than a monograph or digraph, but it made the most sense to the native speakers who will be using and teaching the alphabet. This was in line with a central tenet of the participatory methodology: to accept and support the decisions of the community.

### 3.3 Exploring grammar

After establishing the letters of the alphabet, we spent time working through the basic grammar to make sure that the orthography was adequately differentiating pronouns, verb conjugations, and other grammatical markings. This portion of the workshop was guided by one of the linguists, as it involved eliciting some paradigms and looking at different types of phrases. Some of the research questions included:

- Do the tones interact with adjacent tones?
- Are there grammatical tones?
- What agreement or case markers are there for various parts of speech?
- Are there clitics or particles?

Using the flipchart, the linguists asked the participants to write out various sentences and paradigms. This gave them the opportunity to practice using the new alphabet and become more aware of grammatical elements. One person wrote out each sentence and the others would suggest spelling changes.

In the verb paradigms, it became clear that vowel length in verbs is grammatically important: all verbs end with a short vowel in the perfective but a long vowel in the imperfective. For example:

- |    |                       |                  |
|----|-----------------------|------------------|
| 1) | <i>Ma nya</i>         | <i>à'buà.</i>    |
|    | 1sg eat.perfective    | banana           |
|    | 'I ate banana.'       |                  |
| 2) | <i>Ma à'buà</i>       | <i>nyaa.</i>     |
|    | 1sg banana            | eat.imperfective |
|    | 'I am eating banana.' |                  |

This confirmed the need to write long vowel sequences, since they code grammatical information, and to include this principle in the orthography guide. It also showed the workshop participants the importance of writing double vowels in order to accurately express meaning. For those involved in translation, it was also helpful to become aware that Ma'di Urule switches between SOV and SVO word order depending on the verb stem. This enables them to pay closer attention to using a natural word order when translating from other languages, including English.

### 3.4 Word boundaries

One specific grammar issue we worked on was establishing norms for word boundaries. This can create a lot of confusion for new writers. The linguists had noticed a number of potential affixes, for example many words ending in *-za*. We wrote all these words on the flipchart and then the participants discussed whether they should be written as one word or as two words, for example:

- |    |                 |                 |                          |
|----|-----------------|-----------------|--------------------------|
| 3) | <b>Option A</b> | <b>Option B</b> |                          |
|    | àndèzà          | àndè zà         | 'state of being tired'   |
|    | suzà            | su zà           | 'state of being in pain' |
|    | wazà            | wa zà           | 'state of being ripe'    |
|    | wèzà            | wè zà           | 'state of swimming'      |

In this case, the decision was to write words with this suffix as single words (Option A). Rather than a linguist spending hours trying to figure out the function of this morpheme – derivational, inflectional, clitic – and then making a recommendation, the participants were able to use their native speaker intuition. Making a conscious decision about this and including it in the orthography guide sets a norm that new writers can follow and creates consistency for readers. This process was repeated for all the other affixes we were able to identify.

We also considered how to write reduplicated words, compound nouns, and numbers. For example, the number 22 consists of four morphemes (bundle-two-top-two), so we wrote four options on the flipchart:

- |    |                   |    |
|----|-------------------|----|
| 4) | kàlí ìrì drìa ìrì | 22 |
|    | kàlîrì drìa ìrì   | 22 |
|    | kàlîrì drìairì    | 22 |
|    | kàlîrìdrìairì     | 22 |

In total, the participants spent about an hour of the workshop discussing where to put word boundaries in numbers: they chose the second option where *drìa* 'on top of' is always written separately but otherwise each digit is one word. Thus, they were able to use their native speaker intuition to create rules that will make sense based on the grammar of Ma'di Urule.

The result of this work was a section in the orthography guide explaining word boundaries and giving examples for different derivational morphemes and clitics. These principles were created without a linguist needing to analyze the grammar for months or understand the exact function of each morpheme, and yet community members have found that the rules make sense for reading and writing their language better than previous ad-hoc orthographies.

### 3.5 Grammatical categories

By this point in the workshop, there were about 1300 cards and all the spellings had been corrected. However, many of these cards were labeled with the wrong part of speech; for example, some apparent nouns were labeled as "v." In order to make the word list data more useful after the workshop, we decided to go through and label them correctly.

Based on the preceding grammatical analysis, the linguist created several frames. These frames consisted of a sentence with a slot to place different words; the rest of the words in the frame phrase remained the same throughout. We started by writing one frame for each main part of speech on the flipchart and then held a card on different lines to find which one it fit in. Here are a few examples:

- |    |                      |                             |           |
|----|----------------------|-----------------------------|-----------|
| 5) | ma ___ ndrèe.        | 'I see ___'                 | NOUN      |
|    | ma àfa ___ vi ndrèe. | 'I see a thing that is ___' | ADJECTIVE |
|    | ma àfa o ___.        | 'I did the thing ___'       | ADVERB    |

Several additional frames were necessary to accommodate abstract nouns, etc. We then labeled the card with the appropriate part of speech: 'n,' 'v,' 'adj,' etc. The participants soon caught on to grouping the words by function and were able to quickly sort the remaining several hundred words.

This functional approach to word categories seemed helpful to them. English grammatical categories are usually taught in Ugandan schools based on meaning: for example, a noun is a "person, place or thing" and a verb is an "action word." However, this definition of parts of speech does not translate well to other languages. By using this process, it allowed the participants to discover how to group words into categories by their function in a sentence and which affixes they can combine with.

If time had allowed, it would have been interesting to have the participants mark all the words in a text according to their grammatical categories. If several texts had been created, these could have been published to help introduce people to the new writing rules.



### 3.6 Draft orthography guide

The final day and a half of the workshop was spent preparing a draft of the orthography guide explaining the various decisions. The linguists gave the participants an outline and general guidelines on what to include:

- Introduction
- Background on people, language and orthography
- Tone
- Vowels
- Consonants
- Word Boundaries (for compounds, reduplication, numerals, locatives, etc.)
- Loanwords
- Proper names
- Punctuation
- Sample text in new orthography

The participants worked together to create a handwritten guide with rules and examples. The goal was to develop a complete overview of how to write Ma'di Urule.

### 3.7 Post-workshop

After the workshop, one of the linguists typed up the word list and edited the orthography guide to include more examples. Over the next few months, the translation team also suggested several changes and additions based on their experiences using the new orthography. Throughout the revision process, the linguist requested and incorporated input from the workshop participants.

During the revision process, many words were found to have spelling errors, especially for tone and vowel quality. This is not surprising, since it takes time to develop confidence in new spelling rules. Here it would have been helpful for the editing linguist to have a recording of the word list. This would have made correcting the word list and doing a preliminary phonological analysis much easier. Had time allowed, it would also have been fruitful to collect the entire 1700-item SILCAWL rather than just a portion.

In May 2021, sample copies of the orthography guide were printed, and participants from the workshop presented it at a meeting of the Ma'di Uruleti Language Development Committee. About forty community leaders were in attendance. The committee decided to approve it with minor changes, and several hundred copies have now been printed for distribution in the community.

## 4 Conclusion

The result of the 11-day workshop was that the workshop participants not only created an alphabet and writing rules but also became more confident and competent in writing their language. They also developed a more conscious understanding of how Ma'di Urule works and how to teach the new orthography to others.

The reality today is that many communities already have some education and literacy skills in other languages. Many communities have made attempts to write their language but

found that the orthography of the national language is inadequate. This methodology encourages the participants to bring their knowledge and experiences into the process, rather than relying on an outside linguist as the sole decision-maker. Whatever the situation, the workshop steps can be adapted as necessary.

This type of workshop can be facilitated by most linguists with an understanding of phonology, grammar and orthographic principles, as well as a general knowledge of orthographic conventions in use in the area. Because the decisions are made by the community members, the linguist does not need to be an expert on the particular language. Rather, the linguist is responsible for asking questions, looking for potential issues, and guiding the workshop process. The linguist has a responsibility to suggest easy, clear options for writing, but ultimately it is the community who will be writing and reading using the new rules. Through the participatory process, the community receives guidance on orthography development while retaining ownership of the result.

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