

Phonologic variation in Palu'e, a language from Eastern Indonesia, and the devising of an orthographic system*

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ABSTRACT

This article presents a phonological description of the Palu'e language variants and reflects on the problems of representing the language in writing. Verifiable lexical and phonological data are made available and an orthography is introduced. Data and analysis is drawn from a comprehensive documentation, and specific recordings of three speakers/language variants reading the same wordlist, available in an online audio collection. The phonetically transcribed recording of one speaker is compared with the other two and the corpus-based phonological description, and provided in an annotated appendix. The annotated recordings support the estimate of >99% lexical congruence and mutual intelligibility between variants. From a multi-variant perspective several phonemes are in free variation with each other. /tʃ/ does not occur mid-word/second syllable in the interior variants that use the initial PMP *c instead of the coastal /s/, but is in complementary distribution with mid-word /dʒ/. /s/ is neither in complementary distribution with /tʃ/ nor /dʒ/ in the coastal variants. Several Palu'e variants exhibit sufficient specific features to be referred to as dialects, including two of the recorded samples, whereas the speech patterns of the phonetically transcribed speaker make sense from the perspective of the surrounding variants.

Keywords: *Austronesian, Palu'e, Flores, phonology, orthography, language variation, language documentation*

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1. Introduction

1.1 Subject, aims, methods

This article describes some features of the phonology of Palu'e (ISO 639-3 code ple, local name *sara Lu'a*), which is spoken by the Palu'e (*ata Lu'a*) on the island Palu'e (*Lu'a*) near the north coast of Flores in the eastern Indonesian province Nusa Tenggara Timur. Description and analysis is grounded in the author's comprehensive documentation of the Palu'e language and its oral traditions, including the transcription

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of over 300 recordings with speakers from all around the island.¹ The article presents a phonological description of the Palu'e language variants, a preliminary dialectological description, and reflects on the problems of representing the language in writing. The orthography devised as the solution is displayed in the example sentences and in the glosses of the appendix. Verifiable lexical and phonological data are made available for further research.

After an introduction, the paper presents in (1.2), a description of the language situation; then in (1.3) a summary of previous research to further display in (1.4) an account of the specific comparative data. For this purpose three speakers representing three language variants or 'dialects', were recorded reading aloud from a wordlist in order to provide examples of phonological variation, and to assess the observed high level of mutual intelligibility and lexical congruence. Section 2 is a broad description of Palu'e phonology (2.3-2.4), beginning with (2.1) the orthographic issues and a brief description of structure and typology (2.2). Section 3 is the summary with conclusions.

The wordlist (English, Indonesian, phonetic transcription of one speaker, Palu'e glosses) is provided as an annotated appendix with comments on sounds, lexemes, ambiguities, alternates, and differences of pronunciation.²

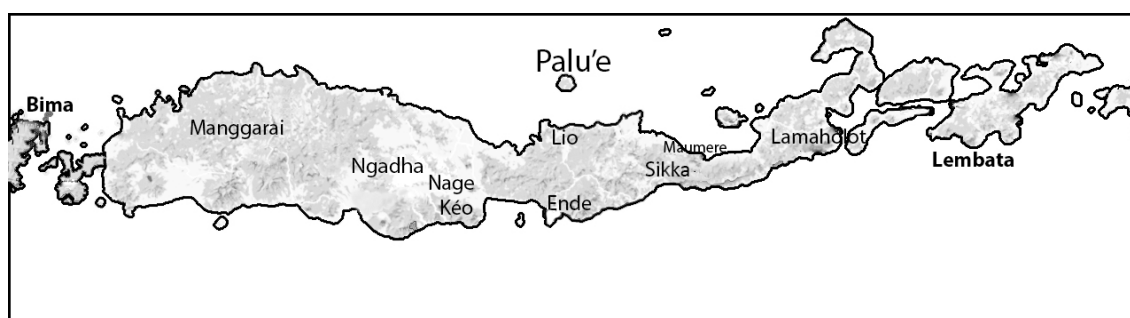


Figure 1. Map of Flores. The major Flores languages are indicated at their approximate positions.

1.2 Language situation

The island of Palu'e is a municipality under the Sikka regency (Maumere) in Flores, Eastern Indonesia (see map in Figure 1). Uwa is the island's largest settlement, hosting the municipality office, junior high schools, a harbour, and passenger boats. Less than 10 000 speakers reside on Palu'e, which only covers about 49 km². Several thousands more live in migrant communities on Flores. It is difficult to make a proper census on the island because many Palu'e reside both along the Flores north coast and on Palu'e, and many migrate far away for work, often for several years.³ There is a significant Palu'e settlement in Nangahure, east of Maumere (in the main island of Flores), founded

¹ See Himmelmann (2006) for a review and definition of endangered languages documentation. See item SD1-000 in Stefan Danerek Collection – Palu'e Audio, Kaipuleohone, the University of Hawai'i Digital Language Archive and Danerek (2017) for more detailed information about the project and the collection. Hereafter collection items will be referred to with item numbers only. Consult also the Palu'e-Indonesian dictionary (Danerek 2019), which was finalized during the editing of this article. The main fieldwork was followed up by shorter visits until 2019. In total, the author has spent a full year among Palu'e speakers.

² Next to transparency and to account for shortcomings, the intention is to transfer additional information about the language.

³ An unpublished municipality document from Dec 2011 mentions 9939 inhabitants, before the volcanic eruptions 2012-2013 and the relocation of over a thousand people. Fernandez (1989:87) mentions 12 000 inhabitants.

after the volcanic eruptions on Palu'e in the mid 1980s. The population increased significantly with the influx of refugees after the 2012-2013 volcanic eruptions.

Palu'e is classified as Austronesian, Malayo-Polynesian, Central-Eastern Malayo-Polynesian, Bima-Lembata (Simons and Fennig 2019). Fernandez (1988) argues for a Flores group of languages with a source in a proto-Flores language. In subsequent works (1989a and 1996), he divides the Flores group into East, Central and West Flores languages, and labels the Central group 'Ngadha-Lio-[Palu'e]', including Nage, Kéo and Ende. Manggarai and Lamaholot languages respectively, dominate the West and East Flores groups.⁴

The Central Flores linkage with Palu'e is described as a 'dialect chain' (Fox 1998: 3-5), which runs through the whole island of Flores. Like the other languages of the Central Flores group, Palu'e is an extremely isolating language of the SVO-type. The Central Flores languages are more related to the West Flores languages than the East Flores languages, which are less isolating and more grammatically complex. Blust (2013), like Fernandez (1996), lists Sikka (or 'Sika') in an East Flores subgroup with the Lamaholot languages, which are spoken also on Lembata and Solor islands. The language affinity of Palu'e can thus be described in the following order: Austronesian – Malayo-Polynesian – Central Malayo-Polynesian – (Central Eastern Malayo-Polynesian) – Bima-Lembata – Flores – Central Flores – Palu'e.⁵

No other ethno-linguistic groups reside on Palu'e Island other than the Palu'e, who are more defined by place and language than by ethnicity. There are many origin groups, or clans (*kunu*), on Palu'e. Those who claim first settler status traditionally take political and ceremonial leadership before groups which came later, in each of the fourteen tribal lands with borders, called *tana* on Palu'e, and hereafter referred to with the anthropological term '(traditional) domain'. Palu'e ceremonial customs and culture are stronger and more elaborated in the seven 'domains of buffalo blood' (*tana laja karapau*),⁶ so defined by their largest sacrificial animal, the water buffalo. The other domains are often referred to as 'domains of pig blood' (*tana laja wawi*) according to the same principle.

The Palu'e language is not critically endangered, but certain language domains certainly are, notably, but not limited to, ritual-poetic use of language, *Pa'e* ('speaking in pairs').⁷ Today all Palu'e are able to speak Indonesian, in the style common to eastern Indonesia and Flores in particular. The grandparent generation generally received four to six years of elementary school, but not everybody of this generation did attend school. People who are around 40 years of age today often received six years of schooling. Today it is common to finish at least junior high school, and to continue to senior high school, and even on to proceed to higher education. Palu'e is still used in everyday conversation on Palu'e, whereas in Nangahure, Indonesian is used more frequently than on Palu'e. The youngest, if born on Palu'e, still learn Palu'e before Indonesian, but not all Palu'e are fluent in their mother tongue. For comparison, the author is not perfectly fluent in Palu'e,

⁴ Blust (2013), like Fernandez (1996), lists Sikka in an East Flores subgroup with the Lamaholot languages.

⁵ Donohue and Grimes (2008) present objections to the Central Eastern Malayo-Polynesian group proposed by Blust (1993).

⁶ Vischer (2006:181) mentions 14 traditional domains. Three costal domains (see Palu'e map) are small, adjoined, and share a ceremony which is rarely carried out.

⁷ See for instance Fox (2014) about semantic parallelism.

but comes across speakers who are less proficient, due to their habit of using Indonesian or mixing.⁸

Palu'e is endangered because of this process of language shift toward the national language, enhanced by frequent work migration to Malaysia where the Palu'e use Indonesian, influenced by the surrounding Malaysian Malay. In situations where non-speakers of Palu'e are present, or the more formal a situation, the more Indonesian is used. Language shift is more intense, but not limited to, in the coastal domains. The phenomenon is not limited to the youth only. The dominant factors of language shift are: 1) migration for work, primarily to Malaysia, or migration for higher education; 2) education and the influence of the national language; 3) relocation to Flores because of the recurring volcanic eruptions.

On the main island of Flores the Palu'e primarily use Indonesian in communication with other ethno-linguistic groups. In the case of migration to the island of Flores, Palu'e children often learn Lio with relative ease compared to Sikka (Maumere). These are the two other, significantly larger Flores languages, with which the Palu'e are in frequent contact with over 100 000 and some 250 000 speakers respectively. Palu'e men have a tradition of doing seasonal work on Flores during the dry season, often in small groups. None of the Flores languages are causes of language shift, but the modern culture of Sikka (Maumere) has a noticeable influence on the Palu'e.

All the different variants or dialects of Palu'e are mutually intelligible and largely coincide with the domains. The language documentation has only recorded few instances of words that are specific to one or more domains, yet often recognized by speakers from other domains. On the map below, the names of the domains are in bold letters and placed approximately at their respective main settlements. The others are names of settlements mentioned in the text, except from Woja, which is a semi-domain whose population are mostly descendants from Kéli. Both the Cawalo and Ko'a domains reach all the way from the north west coast to the south coast, but their populations, like the other, are concentrated in closely located settlements as indicated.

⁸ In the author's work with recordings it was unusual to receive narratives in 100% Palu'e even after the narrators had been instructed to use only Palu'e, and including of recordings done by local assistants.



Figure 2. Map of Palu'e.

The domains are since the late 1960s located among eight *desa* (administrative villages, local government). The administrative borders of a *desa* itself do not follow the borders of the domains therefore hereafter the terms ‘village’ or ‘hamlet’ refer to settlements). The domains form two main clusters of political alliance groups, which in the past meant commitment to support one another in ritual border warfare against enemy domains. The basic form of alliance is marriage and exchange of goods between houses of different origin groups, which used to be endogamous within the domain, or a closely allied domain. Today it is not unusual to marry outside of one’s domain, or even to take a spouse from Flores.

Since the 2000s cement roads between settlements have further contributed to integration. This external factor contributed to the weakening phonological differences among variants, but variation is still so significant that the origins of speakers are usually easily identified. Uwa, the commercial and administrative centre with workers and employees from outside, primarily from the regency capital Maumere, is more affected by language shift than other parts of the island. Uwa, centred on Maluriwu but lacking a clear territorial definition, is formed by a cluster of adjoining seaside settlements, *desa*, and coastal domains, which reach all the way from the coastal hamlets of Ndéo until Ngalu. These coastal settlements do not form separate variants as found in the island’s interior, instead their shared speech patterns are locally referred to as a ‘dialect’.⁹

1.3 Previous research

There are a few previously published descriptions and analyses of Palu'e. Inyo Fernandez (1989b) is a first sketch of Palu'e phonology, using lexical data from a 1,047 items ‘Holle wordlist’ to which ‘a number of lexical items were added’ during a fieldtrip

⁹ Differences, if identifiable, between the coastal domains need to be examined specifically.

in July 1988 (Fernandez 1989b: 88).¹⁰ The lexical data contains a few errors, likely because of the short fieldwork. Fernandez (1989b:88) mentions four ‘dialects’ (Nitung, Uwa, Ona, Cawalo).¹¹ He admits that the number and classification reflects ‘a common view’, also found in an unpublished survey by Widjatmika (1974) that he refers to. Fernandez acquired data from Nitung, Uwa, and (H)ona, but not Cawalo. The Hona variant is, as noted by Fernandez, very similar to Cawalo,¹² whose lands stretch all the way to Hona. Had Fernandez stayed longer and walked around the island talking to the inhabitants, he would have discovered more variants. He makes an important distinction between coastal and interior dialects.

In the following rest of the paper, the term ‘interior’ is used to mention speech variants located on the hills toward the mountain at altitudes of >100 m above sea level. Fernandez’ description of the Palu’e phonemes is similar to this description (2.3, 2.4), except that he includes /gh/ and /z/, which he admits are unusual, and the semivowel /w/. He uses [w] instead of /v/ in the orthography for the sample words, despite the fact that /v/ should be in the phonological chart instead of /w/.¹³

A previous wordlist of Palu’e by Mark Donohue, describing the ‘Nitung dialect’, is found in the Austronesian Basic Vocabulary Database (ABVD. Greenhill et al 2008). Donohue also compiled data for a more extensive wordlist (2003), a tri-lingual dictionary with over 600 entries (including subentries), acquired from Nitung speakers.¹⁴ Donohue (2005a) is a hypothesizing analysis of sound changes from Austronesian/Proto-Malayo-Polynesian (PMP) to the modern Palu’e, also based on data from Nitung speakers. Donohue (2005a) describes /ə/ as an epenthetic vowel that breaks up illegitimate consonant clusters, and Donohue (2005b) describes ‘the Palu’e passive’. Donohue (2009) is a short book chapter dealing with aspects of Palu’e phonology, relevant for this paper. It explores Palu’e nasality and breathiness, and the status of long vowels and diphthongs as mono- or disyllables.

Also to be mentioned among previous publications is a trilingual book for the learning of English, Indonesian and Palu’e, intended primarily for junior high school students, by Frans Sanda (2005), a Palu’e man and lecturer in Kupang. The phonology and orthography is based on the ‘Uwa dialect’. The choice of *gh* instead of *k*, *kh* to represent /k/ and near-sounding phones, such as *ghita* instead of the usual rendering *kita* for IPL.IN ‘we’, and other letter combinations with h, and last but not least the description provided are proof that the data came from the Uwa variant. Being based on Uwa, it was criticized by this author’s Kéli friends.¹⁵ Generally speaking, the inhabitants of each domain consider their ways of doing things, including speaking, to be the more correct, although differences are petty.

¹⁰ All translations are by the author. Fernandez attributes the unpublished wordlist to Michael Vischer in the bibliography. Blust (1993: 243) also refers to an unpublished Palu’e wordlist with the same word count: ‘1,047 items, Lusía Wese (n.d.). Palue vocabulary. Lexical questionnaire collected by Margrethe Dirkwager M. s., 20 pp.’ I have not been able to get a copy of this wordlist. It is not included in the bibliography for the mentioned reasons.

¹¹ The main village of the domain *Nitu léa* is named Nitung, a modern, Indonesian, rendering of Nitu.

¹² SD1-234–236 are recordings of a Hona speaker.

¹³ [z] is heard primarily in the Cawalo dialect (see SD1-299). Fernandez’ conflation of /w/ with /v/ is likely influenced by his Flores background.

¹⁴ The data was initially collected from about 30 families of Nitung speakers living in Batam, and then corrected against data acquired in Nitung, Palu’e on two separate trips (Mark Donohue, personal communication).

¹⁵ It shows how favouring one dialect before others can make other speakers shun the orthography, although the individuals did not take the time to read the introduction about how the writing system was devised.

1.4 Wordlist work process

To compile the wordlist for this article the author began with the Swadesh wordlist (1952), compared it with wordlists of other Austronesian languages, including from ABVD, and replaced a number of items with more culturally relevant glosses, such as 'bow' and 'betel' (areca nut and piper betle). The wordlist was translated into Indonesian and a Palu'e orthography in 2015 after the author had acquired sufficient proficiency in the language. A similar orthography was already used in the very beginning of the documentation research, because a working orthography is immediately needed in any language documentation (see 2.1). The Indonesian was added so that the recorded speakers would not be dependent on the Palu'e glosses, and even correct them if they considered it necessary (see conclusions and comments to appendix). They read through the wordlist before beginning, and before recording they were instructed to read out the Palu'e glosses after a quick glimpse on the Indonesian to the left. This method was chosen to avoid direct translation, which could have resulted in hesitancy and pauses. It would also have resulted in too many lexical differences between the speakers, because of the synonyms, obstructing the aim of phonological comparison. Palu'e abounds with homonyms and like-sounding words, which are recognized in the context of a sentence, especially in writing. The Indonesian gloss exchanges the sentence context. The author has no reason to believe that the written Palu'e influenced their utterances. They, like others of their age group, are used to correctly identify Palu'e words in writing of persons speaking different Palu'e variants, including sentences written in the haphazard manner common in mobile text messages, which they will utter in their own way.¹⁶

In September 2015 the author left a printout of the wordlist with Miss Maria Meti, a 26 year-old resident of village Mata meré, Kéli, who was a language consultant at the time. Meti was learning how to record, and was tasked to record the wordlist after examining it thoroughly. The result is the recording SD1-300, of herself, done at home 9 October 2015. The other two speakers (items SD1-298 and SD1-299) were recorded during a subsequent fieldtrip on a visit to the Cawalo junior high school 28 May 2016. The intention was to record Miss Ofa Longge, an English teacher, about 25 years of age, resident of village Bako, Téo domain. There was time and space available for recording around midday, also of Mr. Nestor Langga, a teacher of sports, about 30 years of age and from the main Cawalo village. The speakers, who already knew the author, were first allowed to familiarize themselves with the wordlist.

The wordlist is quite long; each recording took over eight minutes, which is one reason why the words are spoken in isolation and not repeated. This has pros and cons. The speaker of SD1-299, for instance, used more intonation than the other two, more than would appear in everyday speech. The original materials consist of these three digital recordings, which together with the EAF-files, including metadata for resource recovery, constitute the archival form of the data. The phonetic transcriptions use the International Phonetic Alphabet (IPA 2015) and were made in ELAN, in which the EAF file is linked to the WAV file and the transcription is time-aligned to the recording. The files are archived and available online as items SD1-298–SD1-300 in the Stefan Danerek Collection - Palu'e Audio at Kaipuleohone, the University of Hawai'i Digital Language

¹⁶ In fact, Meti, who recorded herself, also made an additional recording of the wordlist where she imitated another dialect (unpublished).

Archive.¹⁷ The [Palu'e] in the wordlist presentation form (appendix) is described from the recording of the Bako-Téo speaker (SD1-298). The other two recordings are partially transcribed and the words are numbered to facilitate comparison and reference.¹⁸

2. Palu'e Phonology

2.1 *Developing the orthography*

A language's natural variation and diversity, 'heteroglossia' in the terminology of Mikhail Bakhtin (1982: 263, 428), resists standardization. Compilers of dictionaries for endangered languages have often neglected the issue of variation within one language, and singling out any particular variant over the others is problematic (see Rice 2018). For example, speakers of variant A might refuse variant B as the model spoken form for the orthography. The author recognizes this problem for Palu'e, and it is a main reason behind the devising of an orthography that is not based on a singular variant. In writing, the Palu'e tend to follow the style of the Indonesian orthography, which they learn in school. The popular orthography found in SMS or chats on mobile phones, the main forum for writing, is naturally simplified. Educated Palu'e try in vain, without the necessary linguistic skills, to phonetically transcribe their language in with Latin letters (phonemic representation). The results given to the author in meetings or in long chats have been linguistically revealing and useful. The orthography has been developed in consultation with Palu'e assistants and friends, to whom linguistic explanations were given for the few modifications needed to devise a consistent orthography. The author has sought a balance between the advantages and disadvantages of the specialized and the popular options. Another compromise, relevant for a multi-variant orthography and in line with Frank Seifart's (2006:294-295) examples of 'multidialectal orthographies', is that the orthography represents the distinction (/tʃ/) that is not contrastive in the coastal variants, but does not represent distinctions that are contrastive in only one or a few variants.

The orthography was fine-tuned before work began with the phonetic transcriptions for this paper,¹⁹ and it was acknowledged as consistent by a number of individuals consulted for language issues. Yet the author expects objections, which, for instance, can be replied at a future seminar on Palu'e or at the nearest university (Mauwere). It is beyond the scope of this paper to explain at length why a common orthography for Palu'e has not yet been decided on at the island/municipality level.²⁰

One reason is that there is not yet a true need for it, another is that there are too many individual opinions, biased toward their respective domains. Perhaps the Palu'e-Indonesian dictionary (Danerek 2019), which comes with a language description and will be distributed among the Palu'e, will provide a basis for a future common orthography, decided on in deliberation with a range of stakeholders.

¹⁷ See Bird and Simons (2003) and E-MELD (2006) for recommendations of best practice. See E-MELD for definitions of technical terms. About Kaipuleohone, which applies the OLAC metadata and repository standards, see Albarillo and Thieberger (2009).

¹⁸ Comments are also found on the tier 'Notes' in the EAF-files. The files, particularly SD1-299 and SD1-300, and the comments, are to be updated.

¹⁹ Earlier transcriptions in the audio collection made 2014-2015, if not updated, use a less consistent orthography, which neither depicts implosion adequately nor use é for /e/.

²⁰ Consult the previously mentioned works by the author for more information about these issues.

Actually a main problem is not the orthography per se, but which variant of a word it is applied on. Choices have to be made, which to an extent must be arbitrary because it is impossible to determine, for instance, the most widely distributed variant of each word or pronunciation variant. To circumvent this problem and orthographic/language variant authoritarianism, the author allows for variation primarily in, but not limited to, the level of example sentences, which has been appreciated in other contexts (see Keren 2019: 187). Entries are based on the interior variants because they are generally more resistant to language shift, and because several of the associated groups or domains probably have a longer history on the island.²¹ The example sentences display the same words as either interior or coastal, or another feature of phonological variation.

The orthographic system can be applied on all dialects. For instance, the coastal dialects that lack the phoneme /tʃ/ in their phonemic systems (see 2.3-2.4) can opt to use [s], as they pronounce the phoneme /tʃ/ or use the common [c]. The distinction does not cause problems for memorizing and reading. Neither do other smaller distinctions cause problems. Differences with the Indonesian orthography are: 1. /v/ is represented with *w*, as in Palu'e popular writing; 2. The glottal stop is represented with apostrophe [']; 3. *é* represents /e/. The two latter signs became obsolete in Indonesian after the spelling reform of 1972 (*Pedoman umum*) for practical reasons.²² The Indonesian orthography conflates /e/ and /ə/ in the grapheme *e*, which does not suite Palu'e well because it would conflate too many words. For example: 1. words with vocal sequences and words with the same vocals separated by glottal stop, such as *lai* 'praise' and *la'i* 'lick'; 2. minimal pairs with two e-phones, such as *kere* [kəre] 'cut' and *keré* [kəre:] 'stand (up)' (more in examples in 2.2 and 2.4).

The Palu'e are often aware of the need to mark glottal stops with an apostrophe, but they do not use accent to mark /e/, which is important for learners of the language, including those who experience language shift. In addition, the orthography marks the implosives /b/ and /d/ as *bh* and *dh*, features that are recognized by the Palu'e, but often ignored (see 2.3). The orthography is in any case not imposed by a government, which might be an advantage, allowing it to sink in and be tested over a few years. Specific issues in the development of the orthography follow in the phonological description.

2.2 Structure, Typology

Palu'e is an extremely isolating SVO-language. All native words end in open syllables. There are no consonant clusters other than the pre-nasalized consonants. The basic structure of words is CVCV, including initial breathy vowel/aspiration/onset to a VCV sequence. Other combinations are: V, CV, VV, CVV, CVCVCV, CVCVCVCV. The two latter are unusual, mostly mergers. The morphology is limited to the four genitive clitics *-ku*, *-mo*, *-ne*, *-te* that correspond to the 1SG/1PL.EX, 2SG/2PL, 3SG/3PL, 1PL.IN free pronouns. Nitung (including the adjoined domain Cu'a) is the only variant of Palu'e that exhibits the following traits (see Donohue 2005a: 435): The PMP clitics *-ku and *-ta are voiced as *-gu* and *-de*, and the third person genitive *-n* (PMP *-na) is the only morpheme that ends in a consonant. Generally, however, *-ku and *-ta are unvoiced as *-ku* and *-te*, and the third person genitive is realized as the open syllable -

²¹ Oral traditions, both myths and oral history, suggest so. It is also logical that later settlers settle near the coast than in the interior, unless they conquered the territories of previous settling groups.

²² In Seifart's (2006) terminology the Indonesian orthography can be described as 'phonographic', and 'deep' after the reform from a more 'shallow' type.

ne. Palu'e genitive clitics (attached with '-e' in the examples) are often uttered together with the antecedent pronoun as in examples 1a and 1b.

- (1) a. *Ia ngara-ne Cawa (Ngara-ne Cawa).*
 3S name-3SG.GEN Cawa (name-3SG.GEN Cawa)
 'His name is Cawa.'
- b. *Kami poke-ku mara.*
 1PL.EX throat-1PL.EX.GEN dry
 'We are thirsty.'

Palu'e must often use two words to express a one-word gloss in English or Indonesian, as in 1b (noun + adjective = adjective). *Puna* 'do' is the main auxiliary verb (see wordlist item 193), which forms 'verbs' together with adjectives. Palu'e is rich with homophones. [nai] and [lai], for example, have several homophones: *nai* 1. 'long (time)' 2. 'breathing'; *lai* 1. 'fly' 2. 'lungs'.²³ Stress is not a prominent feature of Palu'e, but it can be contrastive, which it is not in Indonesian. The disyllabic structure tends to level out stress. When there is stress, it falls on the penultimate syllable, unless it contains a schwa /ə/, as in the following example: *nera* [nə'ra] 'think'; *néra* ['ne:ra] 'lontar leaf mug'. Stress is not marked in the wordlist for these reasons.²⁴

2.3 Consonants and stops

The phonological chart (2.4 vocals) shows the orthographic representation between slashes where it differs from IPA.²⁵ Loan phonemes are in brackets.

Consonants

		Labial	Alveolar	Palatal	Velar	Glottal
Unvoiced		p	t	tʃ	k	ʔ
				/c/		/ʔ/
Stops and Affricates	Voiced	b	d	dʒ	g	
				/j/		
Prenasals		^m b	ⁿ d		^ŋ g	
		/mb/	/nd/		/ngg/	

²³ The dictionary lists five entries for *lai* and four entries for *nai*.

²⁴ Stress is, apart from heard, to some extent also visible even in the ELAN media player. Click and pull the lower ruler downwards to extend the sound waves.

²⁵ All consonants and vowels are represented in the wordlist.

Nasals	m	n	ŋ /ng/
Implosives	ɓ	ɗ	
	/bh/	/dh/	
Voiceless		s	h
Fricatives	v	(f)	
Voiced	/w/		
Lateral		l	
Trill		r	

The sounds from /p/ to /b/ and from /t/ to /d/, passing the implosives /ɓ, ɗ/, are the most problematic, not least because the sounds are common. For practical reasons it seems easier to not mark the implosive and aspirated phonemes, *bh, ph, dh, th, kh*, and conflate them with non-implosive and non-aspirated into *b, p, d, t, k*. But differences are also phonemic. /b, d/ cannot always be exchanged with /p, t/ without changing the meaning of a word (separate phonemes). Neither can /ɓ, ɗ/ be exchanged with /b, d/, especially mid-word (as a rule the first letter of the second syllable) without sounding alien (allophones). /t/-sounds often sound like alveolar tap /t̬/, and can be difficult to distinguish from /d/, with which it is in free variation, although each variant primarily uses either. The Kéli variant, where the author was based and therefore more influenced from, clearly favours /d/ before /t/ mid-word, and so do the neighbouring domain Ndéo, all the way to the coast. Mid-word /t/ is most clearly pronounced to the east in the Edo domain. The word Edo itself is pronounced [həto] by its inhabitants. The personal name Pitu is [pidu] in Kéli and [pitu] in Edo.

In previous transcriptions, *ph, th*, signified the step on the scale from unvoiced to voiced stop before /ɓ, ɗ/. Educated Palu'e often write phonological transcriptions of the sound this way. Aspiration [p^h, t^h] is often marked that way, and because it is not really the phenomenon depicted with *ph, th*, these were phased out in later transcriptions. Donohue (2005a:431) expressed the above-mentioned problem in his historical analysis of Nitung Palu'e from PMP: '[...] not all the reflexes of *p are voiced; all intervocalic instances of *p are reflected as ʔɓ, but the root-initial reflexes are a mix of p and ʔɓ. There are no medial ps in Palu'e.' Medial /p, p^h/ is however common in the Ko'a and Cawalo variants, and root-initial reflexes can go further toward /b/ in other dialects.

For both mentioned and practical reasons are all additional *h*-s obsolete in the current orthography, including *kh* for /k^h/, except for the marking of the implosives (*bh, dh*). Only *k, t, p* are used.

In the dictionary corpus, the bulk of entries for B, D begins with *bh*, *dh* because the great majority of /b, d/ sounds are imploded, especially mid-word. It begs the question if not /ḃ, ḋ/ are actually the standard phonemes, and /b, d/ only more unusual allophones of the first, perhaps even conditioned by the clearer stops in Indonesian?²⁶ Implosion is conditioned by the following vowel, and there is generally less implosion before first syllable /a/ than before /ə/. Native speakers often recognize unvoiced and imploded stops as exchangeable (free variation). Furthermore, in popular writing, Palu'e people often write *p* of words they utter with [ḃ, b], which conflates contrastive sounds as in the minimal pair [p^hata] *pata* 'float'; [bata] *bata* 'piece (of cloth)'.

/v/ is a Palu'e phoneme, seldom heard in Indonesian. The approximants /j, w/ appear only in diphthongs.²⁷ The faint sounds can be represented with /ɥ, /ɨ/, or /u^w, i^l/. [w] appears in fast speech when *-au* is realized as [aw], but /w/ is not a phoneme. The Palu'e therefore utter the /w/ in Indonesian words as [v]. The letter *v* is pronounced [f], like in Indonesian. *V* is only used for foreign words, like the name 'Vendelinus'.

In isolation or slow speech *-au* is better described as /au^w/ or /au/. /au/ is, for the author, often first perceived when the recording is played at lower speed. All variations occur in the three recordings.²⁸

/dʒ/ does not occur in initial position (more below), and /ʒ/ is not a phoneme. /z/ can, to the author's knowledge, only be described as a phoneme in the Cawalo dialect, where it replaces /dʒ/, as in the following pair of the same word: *kozo*, *kojo* [kozo, kodʒo] 'dig'.

/g/ is a phoneme and appears only mid-word. /g/ exists, but as a sound replacing /k/ in particular words of some variants.²⁹ Conversely, /g/ corresponds to [k^h] in the Ko'a variant, which generally uses the unvoiced stops /p, t/ before the voiced and implosive /b, ḃ, d, ḋ/. This contrasts with Nitung/Cu'a where the opposite phenomenon is dominant, for example: *lape* (Ko'a), *labhe* (Nitung/Cu'a) [lape, laḃe] 'layer'.

Initial /s/ is used instead of /tʃ/ in the coastal dialects, the Cawalo villages of the interior, and in Tomu and Téó, interior domains with villages at lower altitudes than the other domains of the interior. Ndéo borders to Tomu, Téó, Kéli (high interior) and Maluriwu (coastal), and also use /s/, but not as consistent as in Tomu and Téó. The Cawalo [savalo] are especially known to have difficulties with uttering /tʃ/, which is otherwise the rule at higher altitudes of the interior. There are words in the hillside /tʃ/ variants that must begin with /s/, but far more words begin with /tʃ/, whereas several coastal dialects and Cawalo do not use /tʃ/ at all. This means that the Palu'e variants of the interior have kept the PMP *c, whereas the others exhibit the Central-Eastern Malayo-Polynesian *s, which Blust (1993:246) describes as a merger of PMP *c, *s. /tʃ/ does not form any minimal pairs with /dʒ/. The Nitung/Cu'a variants sometimes use /dʒ/ instead of [tʃ], but /tʃ/ is more often retained. In the orthography *c* is chosen instead of *s* for words known to be normally uttered with /tʃ/ in the variants of the higher interior. Examples of the

²⁶ It must be asked for Rongga and other Flores languages too. Wayan Arka's Rongga-Indonesian dictionary (2012) contains over a hundred entries for B and D each, which are implosives (marked as *bh*, *dh* in the orthography). Only four native words begin with d, and 11 with b (*bui* 'jail' must be a loan from the Indonesian colloquial 'bui'), including homophones.

²⁷ The diphthongs can be broadly described, especially from fast speech, as monophthongs followed by an approximant, as Clynes (1997) argued about Proto-Austronesian. Cf. Donohue's (2009: 54-55) argumentation for disyllabic long vowels.

²⁸ [aw] appears in SD1-299, but not in SD1-298.

²⁹ See list item 201, [muḡu abi]. Note the implosive b. Cf. SD1-299-300.

just mentioned domain variants: *coka*, *soka* [tʃoka, soka] ‘dance’; *kokoco*, *kokojo* [koko.tʃo, koko.dʒo] ‘if’.³⁰ /c/ and /s/ can be said to be in free variation from a multi-dialectal perspective. We can utter either *coka* or *soka* and be understood anywhere.

Palu'e pre-nasalized consonants occur also in initial position, like in PMP, unlike the Indonesian pre-nasalized consonants, which occur only mid-word. Pre-nasalized consonants are rarely uttered as clusters as they are in Indonesian. Example: (Palu'e) *ku.mbu* ‘round’; (Ind.) *lom.ba* ‘compete’. /ŋg/ occurs primarily mid-word, but is applied before loanwords to make them indigenous. Example: *nggula* [ŋgula] ‘sugar’ (from the Malay/Indonesian ‘gula’).

Breathy vowels and word-initial /h/ can be described as being in free variation. The vast majority of words beginning with vocals can be uttered with initial /h/ in the variants of the higher interior. An exception is *é* /e:/ ‘yes’, which is never uttered [he:]. The phonological environment matters, /o, u/ attracts more /h/ than /a/ for instance, but no clear rules have been identified. There are also words that must use initial /h/ in every variant. In Ndéo village, just below the allied domain of Kéli, the initial /h/ is often difficult to hear. This must be the breathiness described by both Fernandez (1989b) and Donohue (2009). The higher the altitude of a settlement, the initial /h/ intensifies. The orthography uses initial h but not categorically, because then there would be very few entries beginning with vocals.

Glottal onset /ʔ/ is frequent, especially before initial /k, b/ and similar phones, and before initial vocals, often pronounced with a slight keeping of breath. Native speakers do not recognize any phoneme in the glottal onset, whether vowel- or consonant initial. There are no word-final glottal stops because Palu'e does not allow closed syllables, and there are no final /h/ for the same reason.

2.4 Segmental e and vocal sequences

Phonological chart vocals (monophthongs)

	Front	Mid	Back
High, Close	i		u
Mid, Close	e	ə /e/	o
Low, Open		a	

[ɛ] rarely occurs. /ə/ and /e/, particularly /ə/, are by far the most common e-phones. /ə/ appears as a rule in penultimate position. The distinction with the close-mid-front vowel /e/, especially /e:/, is important. /ə/ cannot form a disyllable with another vocal. /e:/ is marked *é* in the orthography, but /e/ is only marked if there is a particular need to mark the contrast between /ə/ and /e/ in a word, as in rule-reversal. Word-final e is as a rule /e/ or /e:/, but /e/ occurs also in first syllable VCV, including with initial /h/. The

³⁰ *Kokoco* is actually two words: *koko co*, but can be pronounced as a two-morphemic word.

following example shows words with two e-phones in different distributions, the first two form a minimal pair: *hene* [həne] ‘six’; *héne* [he:ne] ‘place/condition’; *meré* [məre:] ‘night’.

Palu’e has the following vowel sequences, or diphthongs, that may be broadly transcribed with the approximants /j/ and /w/: /ai/ [aj], /ei/ [ej], /oi/ [oj], /au/ [aw], /ou/ [ow], /oe/ [oej], /ae/ [æj]. For a novice, disyllables such as /ae, oe/ can be difficult to distinguish from /ai, oi/ (see also wordlist items 63, 67, 116), and disyllables can be difficult to distinguish from the same syllables interrupted by glottal stop. All vowel sequences, particularly in slow speech, are realized as disyllables, as in the following examples of minimal pairs: *lai* [lai, lai^h] ‘fly’. *lae* [lae, lae^h] ‘down’; *Mboe* [mboe, mboe^h] ‘personal name’. *Mboi* [mboi, mboi^h] ‘personal name’. In addition to the above there are the following, apparent, disyllables /eu (eu), ia, io, iu, ua, ui, uo/. In /ia, iu/ the faint sound ^h/ of the approximant /j/ may appear after /i/. All are represented in the transcripts of the appendix, except /iu/ and the more unusual /uo/ (four dictionary entries). Examples: *hiu* [hiu] ‘shark’; *ngguo* [ŋ^hguo].

Because of the mentioned phonological and orthographic reasons, the dictionary corpus, sampled in the examples and appendix, contains no entries beginning with the Latin letters f, g (phoneme), j (phoneme), q, v (phoneme), x, y, z, or glottal stop (phoneme).

3. Summary and conclusions

The Palu’e variants have a shared lexical inventory of over 99%, an estimate based on the documentation research and the compiling of the Palu’e-Indonesian dictionary. The recordings of the wordlist support this high estimate. The three speakers recognized all the items as correct except one or two. One was misspelled (scratch) but uttered correctly by two speakers due to the Indonesian gloss, another (green) has two glosses and the more correct one is uttered in SD1-300 and shown in brackets (*ta’a*). See the footnotes to the appendix about these issues.

The sound of Palu’e is never so varied that speakers of different variants have difficulties in understanding each other. Mutual intelligibility is ensured by frequent exposure to other variants on the small island. Contact between domains is more intense in modern times, and there is peace between the domains since at least three decades ago. Tribal domain identity is a source of difference and variation, but the phonological environment and sentence context also play roles in phonological variation. Variation, more than free variation of sounds, occurs also intra-speaker because there is no standardised version of the language and the just mentioned facts; whether consciously mimicking or not. The mountainous and difficult geography is one of the reasons there are surprisingly many variants for the island’s small size. Another reason is origins, although unclear, the Palu’e originate from several different groups and clans that arrived on the island in several migration waves hundreds of years ago. The related Ende and Lio languages exhibit much greater variation, manifesting itself also in the lexicon. It can be explained by the fact that they are spoken over much larger areas by over 100 000 speakers each, with communities separated from each other by the mountainous topography, and linked through the Central Flores ‘dialect chain’.

In Palu’e there are several phonemes in free variation with each other, particularly from a multi-variant perspective, because variants influence intra-speaker variation. The word-initial /tʃ/ of the interior variants is from this perspective in free variation with /s/

in the coastal variants and Cawalo. Variation is of course less free within a given dialect. Further, there are no mid-word /tʃ/ in Palu'e, instead there is the phonetically similar but distinct phoneme /dʒ/, which occurs only mid-word. These two phonemes are therefore in complementary distribution in the interior dialects on which the orthography at entry level is based.

The transcribed speaker (SD1-298) exhibits the following speech and dialect patterns: 1. She uses the pre-vowel initial /h/ with few exceptions; 2. She never uses /tʃ/ instead of /s/; 3. She utters the voiced stops /b, d/ without, or with insignificant, implosion, which is unusual and contrasts with the two other speakers; 4. She utters both the unvoiced stop /p/ and the voiced /b/. 5. /g/-phones, in free variation (within dialects) with the similar /k^h/, appears thrice; 6. She utters the alveolar tap [ɾ] where the others utter [t, t^h, d].

The speaker's pronunciations can be explained from the view of the neighbouring variants. She is a speaker of the village Bako of the Téó domain, which borders with Tomu to the east, Ndéo to the west, and Kéli to the north.

Téó, Tomu and Ndéo are interior variants at lower altitude than Kéli (high interior), all reach the sea and have settlements near the coast. Their populations are in more contact with the coastal communities than the Kéli. The main difference with the Kéli speaker is the consistent use of word-initial /s/ instead of /tʃ/, an absence which leads to an increase in homonyms.

The main characteristics of the Kéli and Cawalo variants are described in section 2.3. The recordings confirm: 1) The Kéli use of word-initial /tʃ/, and the Cawalo use of word-initial /s/ (both consistent); 2) The Cawalo speaker uses /z/ mid-word where the others use /dʒ/; 3) Both speakers use word-initial /h/, like the Bako-Téó speaker, which is typical of high altitude settlements; 4) The Cawalo speaker make frequent use of /p, p^h/ where the Kéli speaker utters /b/; 5) In addition, the Cawalo speaker uttered [ʔ^g] twice, similar to the Téó speaker [g], variations of /k, k^h/, which are more common in the other variants of the interior.

The sounds /p, p^h, b, t, t^h, d, d/ are often difficult to determine because they are located on a scale from unvoiced to voiced, un-aspirated to aspirated, and from not imploded to imploded. None of them are the exclusive property of any variant, and form few patterns within variants. The uttering of mid-word /b/ and /t, d/, as opposed to /b, p/ and /d/, is the rule in most variants. The stops /b, d/ are exceptions to the rule of /b, d/, particularly mid-word. Voiced and unvoiced stops, primarily /p, b / and /t, d/ are in free variation from a multi-variant perspective, exchanges are not only understood but also uttered by individual speakers, although outside the rule of the speaker's variant. The sounds are contrastive, and in free variation between variants. Existing patterns are the Kéli preference for /d/ before /t/, Ko'a's preference for /p, p^h/ before /b/ mid-word, which is, to a lesser extent, also evidenced in the recorded Bako (Téó) and Cawalo speakers. The Ko'a variant generally uses the unvoiced stops /p, t/ before the voiced and implosive /b, b̥, d, d̥/, in contrast to Nitung/Cu'a where the latter sounds are used. Deepening the orthography with the elimination of the implosives *bh*, *dh* looks practical, but because /b, d/ are more in variation with /p, t/ than /b, d/, it will cause much conflation. Conversely, eliminating *b*, *d* leads to conflating of contrastive sounds into /b, d/. Simplification can also be achieved by creating new graphemes for /b̥, d̥/ instead of *bh*, *dh*, for instance, borrowing the IPA symbols as they are.

The status of the phoneme /d/ particularly, but also /b/, needs attention, also in the related Flores languages. If *d* is almost always imploded, like in Rongga and Palu'e, then the status of /d/ as a phoneme is questionable, akin to an unusual phonetic realization of the phoneme /d/, in free variation.

The Bako-Téo speaker, however, makes a different impression, exhibiting less implosion than most Palu'e speakers. Apart from this, her speech is consistent with her neighbour in Bako, who was recorded in another context (SD1-021). Perhaps the implosions disappeared while pursuing higher education in another province?

More research is needed to determine the status of sounds within each variant. So far it seems that phonological environments do not impose exclusive limits to the mentioned variations. Word-initial /h/, for instance, is only more frequent before /o/ than /a/, which the author determined not only from observation but also from scanning transcripts of narratives. It is also more frequent inside a sentence. What is clear from this preliminary dialectal variation is that variants are important to consider also for small, relatively isolated, linguistic groups.

What is a language and what is not is determined primarily by politics, not linguistics, and it may be similar with 'dialects' or variants spoken in traditional domains with political-ceremonial leadership (Palu'e: *lakimosa*). Of the three variants examined particularly for this paper, the Cawalo and Kéli variants exhibit sufficient specific features to be referred to as dialects; particular forms of Palu'e, peculiar to the specific groups inhabiting the respective domains. The same can be said of Nitung, that can be included with Cu'a and perhaps also with Awa in a cluster. Hona, mentioned in Fernandez' preliminary phonology, is most probably a variant of Cawalo. Edo is also a dialect, perhaps also the neighbouring Woto. The other variants exhibit more shared characteristics, like Téo, Tomu and Ndéo, and might represent a cluster or even one dialect, like what is referred to as the 'Uwa dialect'.

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SOMMARIO

In questo articolo viene presentata una descrizione fonologica di alcune varietà della lingua palu, prendendo anche in esame le problematiche della rappresentazione scritta di questa lingua. Vengono resi disponibili dati lessicali e fonologici verificabili, e proposta una ortografia. I dati e le analisi sono basati su una ampia documentazione, e sulle registrazioni di tre parlanti di altrettante varietà che leggono una stessa lista lessicale, allegate in file audio. La trascrizione fonetica di un parlante viene confrontata con le altre due, e con la descrizione fonologica basata sul corpus, ed è riportata in un'appendice annotata. Queste registrazioni annotate confermano la stima che vi sia una congruenza lessicale >99% e reciproca comprensibilità fra le tre varianti. In una prospettiva di multivarianza, vi sono diversi fonemi in variazione libera tra loro. Ad esempio, /tʃ/ non compare all'interno di parola o in seconda sillaba nelle varietà dell'interno che usano *c del PMP invece della /s/ delle varietà della costa, ma è in distribuzione complementare con /dʒ/, mentre /s/ nelle varietà costiere non è in distribuzione complementare né con /tʃ/ né con /dʒ/. Diverse varietà di palu presentano un numero sufficiente di tratti specifici per essere considerate dialetti, comprese due di quelle degli esempi registrati, e le caratteristiche del parlato dell'informatore della trascrizione fonetica non sono in contrasto con il quadro che emerge delle varietà circostanti.

Appendix: Annotated Palu'e Wordlist

Supplemental material for the article 'Phonological variation in Palu'e (eastern Indonesia) and the devising of a corpus orthography' by Stefan Danerek. The recordings with interlinear annotations (items) are archived online at Kaipuleohone, the digital language archive of the University of Hawai'i:

<https://scholarspace.manoa.hawaii.edu/handle/10125/38830>. Refer to article.

The wordlist features the phonetic transcriptions of a speaker (Longge) from kampong Bako, Téó domain, Palu'e Island. Item SD1-298. Note that the Palu'e glosses do not mimic the phonetic transcripts of this particular speaker. They are written as the entries of the dictionary corpus following the orthography presented in the main paper.

English	Indonesian	[Palu'e]	Palu'e
<u>Personal pronouns</u>			
1. I	saya/aku	[aku]	aku
2. you (SG)	kamu/kau	[kau]	kau ³¹
3. (s)he/it	dia/-nya	[hi ^h a]	ia ³²
4. we (EX)	kami	[kami]	kami
5. we (IN)	kita	[ʔg ^h ita]	kita ³³
6. you (PL)	kalian	[miu]	miu
7. they	mereka	[konəne]	konene
<u>Interrogatives</u>			
8. who	siapa	[hai ^h]	ai
9. what	apa	[hap ^h a]	abha ³⁴
10. where	di mana	[səba]	seba ³⁵
11. when	kapan	[vai ^h bira]	wai bira ³⁶
12. how	bagaimana	[here p ^h a]	ére pa ³⁷
13. why	mengapa	[buʔu ap ^h a]	bu'u abha
14. which	yang	[vo]	wo
<u>Adjectives</u>			
15. small	kecil	[loʔo]	lo'o
16. big	besar	[sa]	ca ³⁸

³¹ [kau], because /u/ is clearly pronounced and there is no approximant.

³² Note that she pronounces the word with [h] here, and without [h] in the introductory sentence at 00:10 min.

³³ Usually this word is less glottalized and nearer [k], as in SD1-299 and SD1-300.

³⁴ Note the difference with list item 1: the optional initial [h] before the otherwise initial [a].

³⁵ This word is always uttered with [s], also in the hillside [tʃ]-uttering dialects.

³⁶ *Wai* is used both to express past and future time, as in *wai cewi* 'yesterday', or *wai rua* 'day after tomorrow'. *Bira* is the equivalent of the Indonesian 'berapa' 'how much'.

³⁷ *Ére pa?* is enough to form the question: 'How is it?'

³⁸ Not contrastive with list item 18, although this utterance can be interpreted as [sa:].

17. long	panjang	[lava]	lawa
18. wide	lebar	[sa]	ca
19. thick	tebal	[kaβa]	kabha ³⁹
20. heavy	berat	[pəɖʒa]	peja
21. light	ringan	[le:a]	léa
22. small	kecil	[loʔo]	lo'o ⁴⁰
23. short	pendek	[boʔo]	bo'o
24. narrow	sempit	[məɖʒe:]	mejé
25. thin	tipis	[niβi]	nibhi
26. sweet	manis	[mi:]	mi
27. salty	asin	[maiʔ]	mai
28. sour	asam	[milu]	milu
29. spicy	pedas	[kəla]	kela
30. same	sama	[hama]	ama
31. other	lain	[iva]	iwa
32. afraid	takut	[təŋa]	tenga
33. brave	berani	[sani]	cani
34. dead	mati	[maʔa]	mata
35. cold	dingin	[piŋi]	pingi
36. hot	panas	[ʔβəʔke]	bheke
37. ill	sakit	[p ^h uʔu]	putu
38. full	penuh	[bənu]	penu ⁴¹
39. new	baru	[muri]	muri
40. old	tua	[duʔa]	du'a
41. old (things)	lama	[holo]	holo
42. good	baik	[^m bola]	mbola
43. bad	buruk	[ⁿ doa]	ndoa
44. clean	bersih	[mila]	mila
45. dirty	kotor	[rak ^h i]	raki
46. straight	tegak	[dʔ ⁿ de]	dhende ⁴²
47. round	bulat	[ʔk ^h u ^m bu]	kumbu
48. twisted	bengkok	[ŋge:o:]	nggéó
49. sharp	tajam	[leʔə]	lé'e

³⁹ Not very imploded.

⁴⁰ This gloss appears twice. Both are kept because the numbering in the related files was already done before the late discovery, and I did not want to cut the recording. *Lo'o* can also be glossed as 'narrow', like a narrow (small) opening of something, which I think was the initial intention.

⁴¹ More often uttered [p^hənu, βənu]. See SD1-299-300. It is probably not a Malay loanword. PMP is 'penuq'.

⁴² The word *beté*, a synonym, actually has a wider usage.

50. dull	puntul	[dubu]	dubu ⁴³
51. slippery	licin	[sali]	sali ⁴⁴
52. wet	basah	[pa:]	pa
53. dry	kering	[mara]	mara
54. near	dekat	[təni]	teni
55. far	jauh	[te:u]	téu

Colours

56. red	merah	[rəɖe]	rete ⁴⁵
57. yellow	kuning	[rerə]	réré
58. blue	biru	[kila]	kila
59. green	hijau	[kila]	kila (ta'a) ⁴⁶
60. brown	coklat	[me:dʒa]	méja
61. black	hitam	[miɖe]	mite
62. white	putih	[p ^h ura]	pura

Human

63. woman	wanita	[haʒa vai ^j]	ata wai
64. man	lelaki	[haʒa laki]	ata laki
65. human	manusia	[haʒa piʔi]	ata piʔi ⁴⁷
66. child	anak	[hana]	hana
67. wife	istri	[vai ^j]	wai ⁴⁸
68. husband	suami	[laki]	laki
69. grandparent	kakek/nenek	[p ^h u:]	pu
70. ancestor	leluhur	[p ^h u mori]	pu mori ⁴⁹
71. mother	ibu	[hina]	hina
72. father	ayah	[hama]	hama
73. elder sibling	kakak	[kaʔe]	ka'e ⁵⁰
74. younger sibling	adik	[hari]	ari

⁴³ The word was written *tubu* in the handout, like I had acquired it previously. Actually, none of the three speakers (SD1-298–SD1-300) clearly implode the /d/ in this word. Neither is the /b/ imploded, especially in this Téou speaker. *Dou* is an alternative gloss.

⁴⁴ Another example of an initial /s/-word that is never uttered with [tʃ] in the hillside dialects.

⁴⁵ Repeated after end of word list with list item 65.

⁴⁶ Meti correctly utters *ta'a* for the same list item in SD1-300 at 02:21 minutes. Previous informants had provided *kila* for both 'green' and 'blue', which seems to be a common phenomenon in the region. Nature is green, which is why *ta'a* 'unripe' is also a word for green, and the most appropriate.

⁴⁷ *Ata piʔi* is uttered at the end of the recording.

⁴⁸ This word is also a verb, similar to the Indonesian 'kawin' 'to marry, have intercourse'.

⁴⁹ *Mori*, binary pair with *pu*, means 'grandparents parents'.

⁵⁰ The words for siblings are not gendered in Palu'e and Indonesian.

Nouns

75. animal	binatang	[kəna more]	kena ⁵¹ more
76. buffalo	kerbau	[karapau ^w]	karapau
77. fish	ikan	[ika]	ika
78. bird	burung	[kolo]	kolo
79. dog	anjing	[sau ^w]	sau
80. chicken	ayam	[manu]	manu
81. bee	lebah	[he:ro ^m bu]	ero mbu
82. louse	kutu	[ʔuɖu]	dhutu ⁵²
83. snake	ular	[hola]	hola
84. worm	cacing	[hule]	hule
85. tree	pohon	[kadʒu buʔu]	kaju bu'u
86. forest	hutan	[bune]	bune ⁵³
87. branch/twig	ranting	[riʔi]	ri'i
88. fruit	buah	[vua]	wua ⁵⁴
89. seed	biji	[vəɖʒa]	weja
90. leaf	daun	[vunu]	wunu
91. root	akar	[vaka]	waka
92. bark	kulit kayu	[^ʔ kadʒu lokene]	kaju lokene ⁵⁵
93. flower	bunga	[soa]	coa
94. grass	rumput	[hobo]	hobo
95. skin	kulit	[loke]	loke ⁵⁶
96. feces	tahi	[daʔi]	tai ⁵⁷
97. meat	daging	[hi:]	hi
98. blood	darah	[ladʒa]	laja
99. egg	telur	[dəlo]	delo
100. bone	tulang	[ludʒi]	luji
101. fat	lemak	[na:]	na
102. tail	ekor	[hiʔo]	hio
103. feather	bulu	[vulu]	wulu
104. sun/day	mata hari/hari	[həra]	hera

⁵¹ Cf. list item 199, where the schwa is shorter (epenthetic), and the stress stronger on the final syllable.

⁵² Cf. SD1-299 [ʔk^hutu], and SD1-300 [dudu], which primarily signifies 'body louse'. The word given by Longge and Langa is possibly a Malay loanword, which primarily signifies 'head louse'. Usages are not consequent.

⁵³ The speakers could also have chosen to utter either *huta*, possibly a Malay loan word, or *dhue* 'jungle' 'hutan belukar'. *Bu*, the ground form, is not used.

⁵⁴ *Wuane* is the generic form for any fruit of a certain species (x *wuane*). *Wua* is 'areca nut', which is chewed together with *mutu* 'piper beetle'. The combination ('sirih pinang' in Indonesian) is glossed as 'betel' in item 137.

⁵⁵ The initial [k] is almost not there. It is near [ʔ]. Cf. list items 85, 118, 147, and the other recordings.

⁵⁶ Cf. list item 92. The clitic *-ne* seems to pull the *e* in *loke* toward /ə/.

⁵⁷ This word is often mixed up with [daʔi] 'intestines': Meti in SD1-300 utters [taʔi], whereas [daʔi] is the more common pronunciation for 'intestines' in the Kéli dialect. [tai] is the chosen dictionary form, with the note that these words are not used consistently. I do not claim that the speakers are wrong.

105. moon	bulan	[vula]	wula
106. star	bintang	[kiˀa/tala]	kia/tala ⁵⁸
107. night	malam	[mərɛ]	meré
108. stone	batu	[vatu]	watu
109. soil/land	tanah	[dana]	dhana ⁵⁹
110. sand	pasir	[ʔg ^h əri]	keri ⁶⁰
111. sea	laut	[daiˀ]	dhai
112. lake	danau	[rano]	rano
113. river	sungai	[naŋa]	nanga
114. salt	garam	[bara laʔi]	bara laʔi
115. dust	debu	[havu]	awu
116. water	air	[vaeˀ]	wae
117. rain	hujan	[hura]	hura
118. cloud	awan	[koro]	koro ⁶¹
119. wind	angin	[haŋi]	angi
120. lightning	kilat	[ŋile]	ngile
121. sky	langit	[k ^h əle]	kele
122. fog	kabut	[k ^h əbe]	kebe
123. fire	api	[haβi]	abhi
124. smoke	asap	[nu:]	nu
125. ash	abu	[havu]	awu
126. road	jalan	[lala]	lala
127. hole	lubang	[liˀa]	lia
128. volcano	gunung api	[muɖu]	mutu
129. hill	bukit	[volo]	wolo
130. name	nama	[ŋara]	ngara
131. wing	sayap	[ləba]	lebha
132. left	kiri	[hiri]	hiri
133. right	kanan	[pana]	pana
134. banana	pisang	[muku]	muku
135. bow	busur	[vu:]	wu
136. arrow	panah	[huβe]	hube
137. betel	sirih pinang	[vua mut ^h u]	wua mutu ⁶²

⁵⁸ The words were optional, but the speaker uttered both. In the dialects of the interior, *tala* refers only to the largest stars.

⁵⁹ Not really imploded, like list item 111. Longge is often nearer to [d]. The stress is on the first syllable, which in some dialects is realized with /t/.

⁶⁰ [ʔg^h] is more common in the coastal variants of Palu'e.

⁶¹ Minimal /k/.

⁶² Here referring to the fruits of the areca palm and the piper betle plant, which are chewed together.

138. tuber	ubi jalar	[uvi]	uwi ⁶³
139. rice	nasi	[lama]	lama
140. rope	tali	[dali]	dali
141. field	kebun	[huma]	huma ⁶⁴
142. canoe	sampan	[sobɛ]	sobhe
143. knife	pisau	[^ʔ kə ^ʔ ti]	keti ⁶⁵
144. pot	periuk	[ləge]	lege
145. rattan	rotan	[hua]	hua
146. oil	minyak	[ləŋi]	lengi
147. wood	kayu	[^ʔ kadzɔ]	kaju ⁶⁶
148. north	lau	[lau ^w]	lau ⁶⁷
149. south	selatan	[radʒa]	raja
150. east	timur	[le:]	lé
151. west	barat	[va]	wa

Bodyparts

152. forehead	kening	[va]	wa ⁶⁸
153. hair	rambut	[lolo]	lolo
154. ear	telinga	[dɪlu:]	dhilu
155. eye	mata	[mata]	mata ⁶⁹
156. nose	hidung	[ŋiru]	ngiru
157. mouth	mulut	[vəva]	wewa
158. tongue	lidah	[ləma]	lema
159. tooth	gigi	[ŋiʔi]	ngi' i
160. foot	kaki	[vaʔi]	wa' i
161. leg	kaki	[vaʔi]	wa' i
162. knee	lutut	[dɔ:]	dhu
163. nail	kuku	[^ʔ k ^h uk ^h u]	kuku
164. hand	tangan	[lima]	lima
165. arm	lengan	[dɔ ^ʔ ʒa]	dhebha ⁷⁰
166. belly	perut	[kabu]	kabu

⁶³ Langga and Meti chose to utter *ndora*, a species of vine tuber, because of the Indonesian gloss 'ubi jalar' 'vine tuber'. 'Ubi' would have been a better Indonesian gloss because it is more generic, like the Palu'e *uwi*.

⁶⁴ Agricultural field, plantations, gardens.

⁶⁵ Alt. [^ʔkʔti]. Cf. list item 200, also in SD1-299–300.

⁶⁶ Cf. list items 85, 92.

⁶⁷ In Palu'e, both location and direction are expressed with this and the following three words, and *reta* 'up' and *lae* 'down'

⁶⁸ This word is perceived by the Palu'e as a homonym with the previous word, like the other instances of identical phonetic transcripts.

⁶⁹ The stop in 'eye' is nearer to [t] than in 'dead', which is nearer to alveolar tap [t̪] or [d]. Cf. list item 191 and SD1-299–300.

⁷⁰ Cf. SD1-299.

167. guts	usus	[daʔi]	da'i ⁷¹
168. neck	leher	[dɛŋu]	dhengu
169. back	punggung	[dɔlalo ⁿ da]	dhola londa ⁷²
170. shoulder	bahu	[badʒu]	baju
171. breast	susu dada	[dusu]	dusu ⁷³
172. heart-lungs	jantung-paru2	[bulai]	bu lai ⁷⁴
173. heart (mind)	hati	[haʔe]	ate
174. liver	hati	[haʔe]	ate

Verbs

175. be	ada	[noʔo]	no'o
176. do	buat	[p ^h una]	puna
177. drink	minum	[ninu]	ninu
178. bite	gigit	[ŋaʔo]	nga'o
179. eat (tubers)	makan	[ka:]	ka ⁷⁵
180. spit	ludah	[ŋiru]	ngiru
181. vomit	muntah	[sɔdɔ]	cedho ⁷⁶
182. see	lihat	[lie:]	lié
183. hear	dengar	[te:]	té
184. know	tahu	[suʔu]	cu'u
185. think	pikir	[nəra]	nera
186. blow	tiup	[p ^h u:]	pu
187. breathe	nafas	[nai ^j p ^h u:]	nai pu
188. laugh	tawa	[tava]	tawa
189. weep	menangis	[taŋi]	tangi
190. smell	cium	[ŋuru]	nguru
191. sleep	tidur	[tuba/tuba mata]	tuba/tuba mata ⁷⁷
192. live	hidup	[more]	more
193. kill	bunuh	[p ^h una mada]	puna mata ⁷⁸
194. shoot (arrow)	panah	[sube]	cube

⁷¹ Little or no implosion. Implosion is insignificant in several list items, including the following. Also, this speaker does not utter 'feces' and 'intestines' differently, which the speaker of SD1-300 does.

⁷² Note [dɔ^lla loⁿda] are two words. In separation, the words denote the upper back below the shoulders, and the middle back. The speaker of SD1-299 utters only *dhola*.

⁷³ The unvoiced *tusu* means 'milk' or 'breastfeed'. No free variation between the different stops.

⁷⁴ The two organs are conceived of as being joined. The two words are also separate nouns.

⁷⁵ *Ka* applies to rice, tubers, and most vegetables. The word *pesa* [pɛsa] is used for moistly fruits like manggo, fish and meats.

⁷⁶ *Muta*, the Palu'e rendering of the Indonesian *muntah* is more common and more specific.

⁷⁷ *Tuba*, short for *tuba mata*, is an alternative.

⁷⁸ Note the different pronunciation with 191.

195. fight	berkelahi	[sədʒu rəbɛnɛ]	ceju rebene ⁷⁹
196. dance	menari	[soka]	coka
197. hunt	buru	[nusi]	nusi
198. hit	pukul	[balu:]	balu ⁸⁰
199. split	belah	[kəla]	kela
200. cut	potong	[ʔkəʈi]	keti ⁸¹
201. cook	masak	[muɣu haβi]	mugu abhi ⁸²
202. scratch	garuk	[kadʒɛ]	kaje ⁸³
203. swim	renang	[naŋu]	nangu
204. walk	jalan	[pana]	pana
205. come	datang	[mai]	mai
206. lie	baring	[tuli]	tuli
207. sit	duduk	[nodɔ]	noto
208. stand	berdiri	[kə:rɛ]	keré ⁸⁴
209. fall	jatuh	[molu]	molu ⁸⁵
210. fly	terbang	[laiʔ]	lai
211. give	beri	[βəli]	pe ^h li ⁸⁶
212. hold	pegang	[kəvɛ]	kewe
213. rub	gosok	[pono]	pono
214. wash	cuci	[popo]	popo
215. pull	tarik	[(ə)rə ⁿ du]	rendu ⁸⁷
216. throw	lempar	[tə ^ʔ βa]	tebha ⁸⁸
217. push	dorong	[t ^h u:]	tu
218. tie	ikat	[tike]	tike
219. talk	bicara	[nato]	nato
220. count	hitung	[ʔkira]	kira ⁸⁹
221. write	tulis	[tudʒi]	tuji
222. sing	nyanyi	[tio baʈa]	tio bata
223. float	apung	[paða]	pata

⁷⁹ *Ceju* 'pull'; *rebene* 'each other'. The schwa in [sədʒu] is approaching /e/. The Indonesian 'kelahi' is only a noun and must be affixed with *ber-* to become a verb. *Balu rebene* (lit. 'hit each other') is an alternative.

⁸⁰ Another word where the stop cannot be in free variation. The unvoiced *palu* always mean 'return' or 'again'.

⁸¹ Cf. list item 143.

⁸² Or [muɣu]? This word is often uttered with /ɟ/, if not /k^h/. *Abhi* 'fire' implies that firewood is used for cooking.

⁸³ Wrongly written *keje* in the handout, but correctly understood and pronounced by both Meti (SD1-300) and Longge, due to the Indonesian gloss. A homonym of *keje* means 'to peel' (tubers) or 'suffer a tiny wound', clearly related to *kaje*.

⁸⁴ Usually uttered [kə:rɛ:].

⁸⁵ About humans. Animals and things *hoga*.

⁸⁶ [p^həli] is the more common pronunciation.

⁸⁷ This word should be uttered [rəndu]. The letter /r/ in the Palu'e/Ind. alphabet is uttered [ər]. The word *ceju*, see list item 195, is used for heavier pulls.

⁸⁸ The stress is on the ultimate syllable, preceded by glottalization, as is the rule for [β] preceded by schwa.

⁸⁹ Homophone with *kira* 'read'.

224. play	main	[ⁿ de:ro]	ndéro
225. swell	bengkak	[padʒa]	paja
226. burn	bakar	[səwi]	cewi ⁹⁰

Cardinal numbers

227. one	satu	[sa]	sa
228. two	dua	[^h rua]	rua ⁹¹
229. three	tiga	[dəlu]	dhelu
230. four	empat	[ba]	ba
231. five	lima	[lima]	lima
232. six	enam	[həne]	hene
233. seven	tujuh	[ʃɪtu]	bitu
234. eight	delapan	[valu]	walu
235. nine	sembilan	[hiva]	hiwa
236. ten	sepuluh	[ha pulu]	ha pulu

Other

237. every	semua	[dəte diʔone]	dete ti'one ⁹²
238. many	banyak	[rivu:]	riwu
239. much	banyak	[so:]	so
240. few/a little	sedikit	[a loʔo]	ha lo'o
241. and	dan	[noʔo]	no'o
242. this	ini	[ənde]	endé ⁹³
243. that	itu	[vaʔa]	wa'a
244. here	sini	[haʔe]	a'e
245. yes	ya	[e:]	é
246. no/not	tidak/bukan	[kaʔa]	ka'a
247. correct	betul	[molo]	molo
248. above	atas	[re:ta]	réta
249. under	bawah	[laej]	lae

⁹⁰ Burn something that has been prepared for burning. There are several other words for 'burn'. Meti in SD1-300 chose to utter *colo* (burning weeds for example) instead of *cewi*.

⁹¹ Longge pre-aspirates on the initial /r/, perhaps because she is reading the words in isolation. No phonemic meaning is assigned because the sound is not part of the word.

⁹² This conjunct word consisting of the classifier *dete* and *ti'one* 'all' is often shortened and *ti'one* can be pronounced with [t, d, d], as in SD1-299–300 and at the end of SD1-299: [dɛtʃiʔonɛ].

⁹³ The schwa is more often epenthetic in this word.