



Phonology Essentials of Bagobo Klata, a language of the Philippines

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## DECLARATION

This dissertation is the product of my own work. I declare also that the dissertation is available for photocopying, reference purposes and Inter-Library Loan.

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## Abstract

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Bagobo Klata is a minoritised language spoken on the island of Mindanao in the Republic of the Philippines. It displays a number of rare features for philippine-type languages but has been largely overlooked in academic linguistics. This paper grows from observations and linguistic data collected whilst living in Davao City in 2012-13. This data takes the form of word lists, example sentences, and texts yielding approximately 2,000 unique lexical items. Presented here is the analysis of this data as well as its application to orthography design and to the development of Mother Tongue Based Multilingual Education. Bagobo Klata is currently undergoing language shift and it is hoped that this paper will contribute positively to the efforts of those attempting to revitalise it.

## PREFACE

I was first introduced to the Bagobo Klata (also known as Giangan/Guiangan) by Dr William Hall as part of SIL Philippines language documentation and assessment work. Through our discussions during that initial visit in December 2011 (the main aim of which was to make recordings of local stories for preservation purposes) it became apparent that there was a lack of academic linguistic writing concerning Bagobo Klata. This was surprising considering the rich linguistic publishing history of the Philippines and the current favourable attitudes towards and interest in indigenous peoples and cultures. Furthermore, Klata has been classified as a shifting language - and the community has demonstrated a desire to countermand current trends before their language is lost for good. This, together with the current drive to implement Mother Tongue Based Education in the Philippines, convinced me that a technical phonology was long overdue.

It is the purpose of this dissertation, therefore, to describe with examples the phonology of Bagobo Klata. I begin by giving an overview of the general sociolinguistic position, drawn from existing literature and from observations made while resident in Davao between February 2012 and August 2013. This background information is presented to show the necessity of adequately supported orthography development at this crucial moment in the history of the language.

A phonological description follows, including an inventory of phonetic and phonemic elements, discussion of the syllable, stress, and general morphophonemic processes. I also discuss some characteristics of Klata which are relatively uncommon amongst Philippine

languages, namely voiceless nasals, long vowels and word initial consonant clusters.

The dataset used in this analysis consists of elicited word lists, example sentences, and texts yielding roughly 2,000 unique items. It was recorded and transcribed into IPA by myself with Jessie Bugcal, a 47 year old L1 Klata speaker from Cadalian, assisting as principal language resource person. Other L1 Klata speakers from Cadalian, Calinan, and Tamayong also gave input along the way. My working analysis was further refined through a Participatory Orthography Development Workshop held in cooperation with the Philippines Department of Education Region XI over three sessions in the first half of 2013. Additional elicitation as well as several short texts were provided by the workshop participants. The paper concludes with a summary of the activities and outputs of this workshop.

It is my fervent hope that this detailed, albeit not exhaustive, phonological description will serve the efforts of the educators and community leaders who are working to reenergise the language and bring Mother Tongue Based education to the Bagobo Klata. I am also glad to expand the mournfully small body of academic work dedicated to this beautiful language and the gracious, generous people who call it their own.

My thanks go to the following people, without whom this study would not have been possible:

Cesar ‘Datu Aggu V’ Betil for sharing his knowledge of and passion for his language, and for many introductions around the community.

Jessie A. Bugcal for her patience in the countless hours spent teaching me her language, and

for sharing with me her home and family.

The team from CAMACOP Calinan for their joyful hospitality.

The workshop participants and organisers from DepEd Region XI for their openness, willingness, and dedication to getting a lot of work done in a short amount of time.

My colleagues at SIL Philippines, particularly Catherine Young, Bill Hall, and Scott and Becky Burton for their guidance, advice and encouragement.

Finally to Phil King and Cathy Bartram of CLTL, Redcliffe College for corralling this paper into what you now see before you.

#### NOTE ON GRAMMATICAL GLOSSES

Since this study has limited scope and focused mainly on the phonology of Bagobo Klata, it was not possible to undertake an in-depth grammatical analysis as well. Subsequently, all functional/grammatical glosses provided (especially those regarding tense/aspect) should be considered preliminary only and subject to revision should further investigation prove possible.

## CHAPTER 1

### Introduction

Bagobo Klata is spoken by an indigenous people group of the same name from the island of Mindanao in the Republic of the Philippines. Most Bagobo Klata live in semi-rural areas within the administrative bounds of Davao City, the regional capital, which has a population of 1.63 million (NSCB 2012). According to the 2010 census (the most up-to-date available at time of writing) the ethnic Klata population was 43,610 (NSCB 2012: 39).

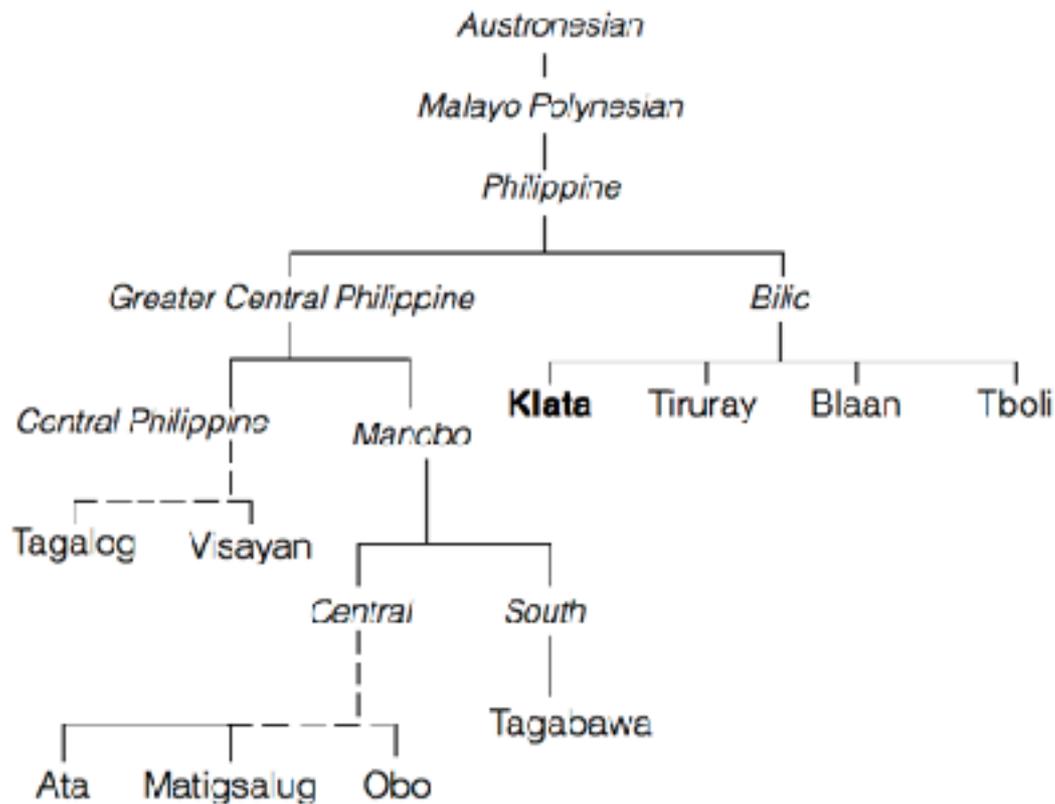
The number of those identifying as ethnically Bagobo Klata who also actually speak the language is debatable. Community opinion holds that the number of fluent speakers is declining, however there have been efforts to reverse this in recent years. Unfortunately, it was outside the remit of this study to conduct a comprehensive survey of language use, however the sociolinguistic situation will be briefly discussed in section 1.3.

The region, reflective of the Philippines as a whole, is a melting pot of ethnicities and consequently highly multilingual. The Bagobo Klata share their borders with Visayan, Davawenyo, Obo Manobo, Tagabawa, and Matigsalug, amongst others (not to mention the national languages of Filipino and English). Culturally, the Klata are considered closest to the Obo Manobo and Tagabawa - the collective term 'Bagobo' can be used to refer to members of any or all of these three people groups.

Linguistically, however, both Obo and Tagabawa are classed as Manobo languages (Simons et al., 2017) whereas Klata is a Bilic language more closely related to B'laan and T'boli - languages spoken primarily in the southern coastal regions around the city of General Santos, some 150km away. This is extremely curious and further investigation into the

historic roots of the language and the effect of any major migrations in Mindanao would be interesting to look into at another time.

Language Family Tree<sup>1</sup>



The area also has strong links with Japan, due to the significant population of Japanese workers in the area at the beginning of the twentieth century. Inter-marriage resulted in many Klata families with Japanese sounding surnames and Japanese language is part of the curriculum at at least one school in the area (Amigo School of Calinan).

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<sup>1</sup> Broken lines indicate a truncation to serve space/need for detail.

## 1.1 A Note on Naming

Before going further, it is worth considering the terminology used in this paper.

Throughout, I will be referring to the language and people as either Bagobo Klata or simply Klata for brevity. However, the official listing in the Ethnologue (Simons et al., 2017) gives the language name as Guiangan and the ISO code (bgi) reflects this. In the few other pieces of literature where the Klata are explicitly mentioned they are also referred to by these two terms, sometimes prefaced with Bagobo. The term ‘Bagobo’ - applied also to the Tagabawa and Obo - is primarily administrative but is also used as a self-referent inconsistently by members of all of these three people groups. Many Klata speakers are happy to call themselves Bagobo Klata or simply Bagobo and so to mark themselves as belonging to this wider group. The term Guiangan, however, is a different matter: I have never heard a Klata speaker self-identity as this.

From its application then, it appears that Guiangan is an exonym and Klata an endonym. Such a conclusion is also supported phonologically. ‘Guiangan’ is usually pronounced [ˈdʒəŋən]. As will be shown in the body of this paper, the phone [dʒ] does not appear in the Klata phonetic inventory. It occurs exclusively as part of loanwords (such as ‘jeep’ [ˈdʒi:p]). The word ‘Klata’ [ˈklətə], however, is not only phonologically compatible but also contains a consonant cluster [kl] which is rare in philippine-type languages but common in this language. Even in the related languages T’boli and B’laan, word initial consonant clusters are separated by a short [ə] represented orthographically by the apostrophe. There is no such vowel interruption in Klata; the consonants are co-articulated.

During my stay in Davao, I heard many interesting and probably apocryphal theories from both community members and outsiders explaining the provenance of the term

‘Guiangan’ (and, entertainingly, also that ‘Klata’ came from the English ‘clatter’ because the language just sounded like a lot of noise!). The most plausible suggestion I came across was from Cesar Betil, a community elder. He supposed that the name derived from an association during the colonial period with a Spanish General called Manuel Guianga. Since one of the areas with a significant Klata population is duly named for this man, I am inclined to give this theory some weight.

In conclusion, I have chosen to use the name ‘Klata’ over ‘Guiangan’ as I believe it is the more linguistically and historically sound choice as well as a seeming community preference. Nevertheless, it is important to be aware of the alternative naming conventions. Other spellings I have encountered are: Clata, K’lata, C’lata (these two presumably applied by those familiar with T’boli and B’laan), Giangan, Jangan, Diangan, Guingan, Djangan, Diyangan, and Guanga. The Ethnologue also lists Atta and Ato but these most likely refer to the Ata Manobo, a neighbouring group (Simons et al., 2017). In the last few years, the name Bagobo Klata (or Bagobo-Klata) is beginning to be used more widely.

An unfortunate side effect of the plethora of names and spellings is that it complicates research to the point where one cannot be sure that one has not missed some vital information simply because the language is referred to by a different name/spelling and therefore the document has escaped the search. I have tried to be as thorough as possible. It is also problematic that ‘Bagobo’ can refer to Klata, Obo, Tagabawa, or any combination thereof and it is often not apparent what the specific subject is without close reading of a document and some prior knowledge of the situation or language(s).

## 1.2 Prior Research

As soon as we begin to look into extant published research on the Bagobo Klata, we immediately run into the terminology dilemma.

The earliest text which appears to reference the Giangan language is a Bagobo-Spanish dictionary compiled by the Jesuit missionary Mateo Gilbert in 1892. Despite being a public domain manuscript available via Gutenberg Press, it is also available for purchase as hardcopy on a variety of websites (e.g. <http://www.lulu.com/gb/en/shop/mateo-gisbert/diccionario-bagobo-espanol-giangan/paperback/product-22741756.html>). Gilbert himself does not identify the language as anything other than ‘Bagobo’ and gives no indication where the data was collected from. The work is identified variously in other online locations as either Tagabawa or Giangan. Disappointingly for the purposes of this research, the subject language does actually appear to be Tagabawa and not Klata.

The definitive early studies of the Bagobo are contained in the works of Laura Watson Benedict and Fay-Cooper Cole, both published in 1913, and Benedict’s 1916 follow-up. All three of these are ethnographies; language is barely touched upon.

Cole is mostly concerned with the Tagabawa. The ‘Guianga’ are referenced on pages 211-212, explicitly citing them as a separate group and not the subject of the rest of the work. He also conflates Obo Manobo with Klata. It is more difficult to tell with Benedict which group or groups she is presenting, since there is much overlap in material culture and beliefs. However, some references to place (including Santa Cruz) and odd bits of vocabulary (such as ‘bale’ for house) indicate that the Tagabawa are again most likely the

main focus, not the Klata or the Obo Manobo. The publications are interesting historically, but not overly useful linguistically.

The next two mentions don't come about until the 1970s. Ernesto Corcino (1976) lists the 'Guiangas' as number seven in his summary article on the tribes of Davao. Interestingly, he does note that they are "characterised by a dialect totally different from the Bagobos, their neighbours", but gives as their location four areas of Davao which do not now contain a significant population of Klata. The second occurrence is even briefer: an entry in Charles Watson's 1979 Philippine Language Tree. The language is placed under the Bilic branch, but no further information is given.

The 1980s, however, produced a more detailed body of work. Shinzo Hayase, an ethnohistorian now based out of Waseda University, undertook oral history research with the Bagobo Klata in March-July 1985 and published a Bagobo Vocabulary containing word lists from Obo, Tagabawa, and Klata in 1989. A member of the community was kind enough to let me look at their copy; due to the simple list format, its usefulness linguistically is somewhat limited, mainly to lexical comparison. There is no accompanying analysis of phonology or grammar and the lists themselves are not phonetically transcribed. Further publications in this decade came from Heidi K. Gloria (now Professor Emeritus at Ateneo de Davao University) - articles in 1984 and 1988, and a book in 1987. Once more, all of these were primarily concerned with ethnohistory rather than linguistics, but the Klata were at least more prominently featured than they had been at the turn of the century. Hayase published additional studies in 1997 and 2007; again with no further major linguistic component. He writes at length about the effect of the Japanese settlement and the

development of large-scale abaca cultivation in the early twentieth century. This becomes pertinent when considering sociolinguistics, and how the indigenous peoples of the Davao area (Klata included) came to be in their current situation - one which until very recently encouraged language abandonment for economic survival.

Rodil (1992 and 1994) gives another useful survey of the general situation of indigenous peoples in Mindanao (also known as 'IPs' or 'Lumad'). Rodil (1992: 2) lists the 16 "ethnolinguistic groups (which) comprise the Lumad". Bagobo are included in the list, as are Manobo, B'laan, T'boli and Tiruray. Tagabawa, Klata, and Obo are not mentioned by name, so the assumption is that they all fall under 'Bagobo'. However, on page 5 he goes on to state "...and from (the Ata's) territory downward to Davao del Sur would be found the Guiangga, Tagabawa and Bagobo." So it is not at all clear how he is using this term. Quizon (1998) gives some insight into the material culture of the 'Bagobo' and the B'laan (an interesting choice of comparisons, given the linguistic links between Klata and B'laan). Page 109 gives a comparative table of weaving-related terms, plus there are a few other vocabulary items sprinkled throughout the text. Other than this, not much attention is given to language.

She does state, though, that: "The published literature on the bewildering number of tribes in what was once the Davao district of southern Mindanao has contributed to a sense of hopeless confusion." (Quizon, 1998: 105-6) This is a sentiment with which I heartily agree! She also astutely observes that "as far as the Davao region is concerned, language and material culture do not have a strict correlation." (Quizon, 1998: 107) This fact has, I think, contributed to the lack of linguistic interest in some IP languages, including Klata. From a cursory outside look, the similarities in material culture suggest that linguistically disparate

groups are a single ethnolinguistic entity and therefore they are dismissed by potential researchers. The assumption is that the published literature concerning, for instance, Tagabawa must of course also cover Klata and therefore original research into a unique language is not seen as justified. This is a terrible shame.

Moving into the current period, as far as Internet representation goes, the Klata do not fare much better than in traditional sources. On Wikipedia, the Tagabawa and Obo both have their own pages (at [https://en.wikipedia.org/wiki/Tagabawa\\_language](https://en.wikipedia.org/wiki/Tagabawa_language) and [https://en.wikipedia.org/wiki/Obo\\_language](https://en.wikipedia.org/wiki/Obo_language) respectively), but the Klata are credited simply as ‘Bagobo’ ([https://en.wikipedia.org/wiki/Bagobo\\_language](https://en.wikipedia.org/wiki/Bagobo_language)). Admittedly, none of these pages are well fleshed out but the Klata page is considerably sparser and more inaccurate.

Unfortunately, the tendency to confuse terms continues even onto the Davao City Government website (City of Davao 2011) where the Obo Manobo are misidentified as Guiangans on the profile page, thus rendering the population distribution information not particularly helpful. The NCCA (National Commission for Culture and the Arts 2015) do slightly better: the three peoples are correctly differentiated as subgroups of Bagobo but described as belonging to a single socio-linguistic group with some cultural and dialectical variation. Other internet sources, from informal blogs to news outlets, vary in their use of any of the terms listed in 1.1.

So is there any linguistics-based published material at all? Hand-written survey records exist in the SIL Philippines library, but these do not appear to have been officially published anywhere. The survey team used the 304 item long ‘Philippine Word List’ to collect data from Tagabawa, Obo Manobo and Klata (then referred to as three dialects of Bagobo) in

1962. A further survey was undertaken, primarily in the barangays<sup>2</sup> of Sirib and Baguio, in 1965-66 using the 290 item 'Expanded Philippine Word List' as well as several short texts. An intelligibility score between Klata, Tagabawa, Obo and Ata Monobo was obtained from these. As far as I can tell, this is the extent of SIL's research with the Bagobo Klata. Neither can I find evidence that any other academic institution was conducting research into this language, then or now.

Around 1990, SIL Philippines was approached by Cesar Betil to conduct further linguistic work. However, at that time, SILP was intending to scale back its work and was not taking on any new projects. Datu<sup>3</sup> Betil was duly directed towards TAP (Translators Association of the Philippines). Due to widespread bilingualism within the Klata population, the language was not prioritised until it made its way back onto SILP's Language Documentation list in 2010. A number of oral and video recordings were made during 2011 and 2012. These are held by the SILP library in Manila but to my knowledge have not yet been interlinearised or published.

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<sup>2</sup> A 'barangay' is an administrative, territorial term. It is roughly equivalent to a village or neighbourhood.

<sup>3</sup> 'Datu' denotes a community leader; this may be official or a term of respect.

### 1.3 Sociolinguistic Overview

Given the relative inaccuracy, indecipherability, or inaccessibility of material concerning the Bagobo Klata, it seems appropriate to give a brief sociolinguistic summary before looking in more detail at the language itself<sup>4</sup>.

Philippine society is multilingual and diglossic. The two official national languages are English and Filipino, but a large proportion of the population also speak at least one Language of Wider Communication (e.g. Visayan, Ilocano etc) and/or one or more minority languages. Over the last few decades, the government has made moves to promote the diverse cultural, ethnic, and linguistic environment of the country. Article XIV (17) of the 1987 constitution provides for the preservation and development of indigenous cultural communities; institutions such as the NCIP (National Commission on Indigenous Peoples) have been established to encourage local traditions and cultural expression, including through minority languages. The Department of Education is actively working to implement mother-tongue based multilingual education. Affiliation to a particular sociolinguistic group is, now perhaps more than ever, a major identity marker amongst Filipinos.

The Bagobo Klata are recognised as one of the ‘11 Tribes’ of Davao and are duly afforded representation at the annual city Kadayawan festival (The Philippine Star 2016). Twenty-two barangay within the bounds of Davao and the south east slopes of Mt Apo have a

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<sup>4</sup> Much of the information in this section is drawn from a more detailed unpublished sociolinguistics paper (Evans 2014), arguing against the appropriateness of the EGIDS scale in this particular situation.

significant Klata population<sup>5</sup>. Calinan Poblacion, the de facto community hub, is about one hour from downtown Davao by public transport; the other settlements are connected to Calinan by passable roads (but not always to each other, due to the mountainous topography). Some younger Klata have moved into the Davao metropolitan area, to Manila or other major cities and, of course, they are represented amongst the massive Overseas Filipino Worker diaspora.

This means that the Klata are relatively well connected to urban areas. Visayan is the LWC in Davao, with Filipino and English also in common use. At time of writing, Visayan was also the medium of education and religion. None of the barangay listed are monolingual or monoethnic. Klata people are likely to have neighbours who identify as Visayan, Obo, Tagabawa, Matigsalug, Tausug, and Ilonggo. This means that most interactions outside of the family involve a language other than one's mother tongue. Most people are bilingual at least; some are highly multilingual (the highest number of languages claimed to be spoken by an interviewee was seven). Code-switching behaviour displayed by the parent and grandparent generations is consistent based on situation and domain. However, younger speakers are more likely to code-mix Klata with Visayan, English, and other local languages. Under-30s were observed to conjugate Visayan root words with Klata affixes, often unconsciously. Exogamy is not unusual; children raised in families where one parent is Bagobo Klata and one is not usually have Visayan as their first language.

The Klata community is not economically self-sufficient - this is in part due to the mixed and interdependent nature of tribal settlements described above. Small-scale fruit farming (particularly durian) or employment with one of the large commercial pineapple and banana

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<sup>5</sup> As reported by Datu Betil and other community elders (2012) these are: Inayangan, Lamanan, Sirib, Tamayong, Tagakpan, Wangan, Subasta, Tambobong, Cadalian, Wines, Baguio, Talomo River, Biao Joaquin, Pangyan, Talandang, Biao Escuela, Manuel Guianga, Calinan Poblacion, Cawayan, Dominga, Dalagdag, and Saloy.

plantations were the twentieth century occupational mainstays. Consequently, many parents have chosen to introduce Visayan in the home to prepare children for school and increase their access to secondary and tertiary job markets. Key members of the community led the way in this and it has resulted in a major disruption in intergenerational transmission. This shift began several decades ago, before the current national climate of celebration of diversity came into full effect. Paradoxically, this move to overcome a socio-economic barrier has now become one in and of itself. Klata speakers are finding themselves left behind in the drive to claim the rewards of cultural distinctiveness. Klata children have, for instance, been rendered ineligible for IP scholarships (such as those provided by the NCIP) because they do not have sufficient fluency in their designated mother-tongue.

Sadly, many Klata speakers are reluctant to identify themselves as such to outsiders unprompted and tend not to use the language in front of non-speakers; the more general term 'Bagobo' tends to be the go-to designation. This is notable in a national social environment where ethnolinguistic affiliation is so heavily linked to identity. Officially, Klata is recognised as distinct from its neighbouring languages. However, in my experience, Klata was almost universally referred to as a 'dialect' (both by insiders and outsiders) rather than a 'language', even though Obo Manobo and Tagabawa were called 'languages'. I suspect this perception is in no small part a reflection of the lack of academic interest in and corresponding perceived status of Klata up to the present time. Unlike neighbouring groups, there are no major vernacular publications, such as a dictionary or Bible translation. Klata is beginning to be used more in digital communication (text messages and social media), but the absence of a codified orthography can mean that people find it easier simply to switch to an LWC than spend time figuring out how to spell what they want to say.

Many Bagobo Klata experience low self-image in regard to their particular tribal origins, and this has been reinforced through their relative standing amongst, and treatment by, larger surrounding people groups and officials. The lack of effort to consistently and appropriately differentiate Klata from other Lumad peoples, as discussed earlier in this Introduction, is symptomatic of the lack of value historically afforded to this language and its speakers.

According to the Ethnologue (Simons et al 2017), Bagobo Klata is a 7 on the EGIDS scale: a 'shifting' language. Landweer's Indicators (2000) yield an average rating of 3, suggesting a risk of loss of vitality but not a certainty<sup>6</sup>. Klata speakers have found themselves in a vicious circle where language attitudes have led to language shift, and that shift has in turn led to reinforcement of those language attitudes. Deep economic and social ties to a semi-urban and multilingual setting continue to influence language choice among the Bagobo Klata. This is not likely to change any time soon. Language attitudes, however, are evolving - both nationally and among the younger generations who are rediscovering the love and pride of their heritage. Here, there is motivation for language revitalisation. It is with this revitalisation work in mind that the following phonology sketch is humbly submitted.

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<sup>6</sup> Interestingly, the other Bilic languages have EGIDS ratings of 4 (T'boli) or 5 (B'laan and Tiruray). One wonders if this is merely a result of slightly higher populations or whether Klata would have suffered less erosion were it not separated from the other three by a swath of Manobo languages.

#### 1.4 Theoretical Framework

The major theoretical frameworks within which this paper operates include metrical theory and autosegmental phonology, with feature geometry as defined by Burquest (1998) and De Lacy (2007).

The distinctive features considered pertinent to this study are:

syllabic
consonantal
sonorant
anterior
coronal
back
high
low
nasal
voice
continuant
round
strident
lateral

## CHAPTER 2

### Phone Charts

The following tables display the phonetic inventory of sounds which are present in the dataset and need to be accounted for in the subsequent discussion:

Table #: Phonetic Inventory of Consonants<sup>7</sup>

	bilabial		alveolar		palatal	velar		glottal
plosive	p	b	t	d		k	g	ʔ
	p̣	ḅ	ṭ	ḍ		ḳ	g̣	
	p <sup>w</sup>		t <sup>w</sup>			k <sup>w</sup>	g <sup>w</sup>	
	p <sup>j</sup>	b <sup>j</sup>	t <sup>j</sup>	d <sup>j</sup>		k <sup>j</sup>	g <sup>j</sup>	
	p <sup>l</sup>	b <sup>l</sup>				k <sup>l</sup>	g <sup>l</sup>	
	p:	b:	t:	d:		k:	g:	
nasal	m̥	m	n̥	n			ŋ	
		m <sup>j</sup>						
		m <sup>l</sup>						
		m:		n:			ŋ:	
flap			r					
fricative			s					h
			s:					
approximant		w		l	j			
		w:		l:	j:			

<sup>7</sup> Superscripts in this table indicate labialisation/palatalisation/lateral release. Examples have been phonetically transcribed as such since the speed of articulation causes presentation as a unit; phonemic interpretation as unit or sequence is discussed in section #.

Table #: Phonetic Inventory of Vowels<sup>8</sup>

	front	central	back
close	i		u
	ĩ		ũ
	ᵢ		ᵁ
	i:		u:
			ũ:
near-close	ɪ		
close-mid	e		o
	e:		o:
mid		ə	
open-mid	ɛ		ɔ
			õ
	ɛ:		ɔ:
near-open		ɐ	
		ẽ	
		ɐ:	

Filipino society is highly multilingual and code-mixing is common. Colloquial Bagobo Klata hence contains a large number of loan words, both from the former colonial languages (Spanish and English) and from other philippine languages which are either culturally dominant or in close geographic proximity (e.g. Tagalog, Visayan, Tagabawa,

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<sup>8</sup> Diacritic [ĩ] is here used to denote laryngalisation rather than standard ‘creaky’ voice. See section # for further details.

Obo Manobo etc). This paper is primarily concerned with the native phonology of Klata. Therefore, any readily identifiable loans were excluded from the data corpus prior to analysis, except where these have undergone indicative phonetic changes (e.g. Tagalog <kulambo> ‘mosquito net’ → Klata <klambu’>). Accordingly, a number of phones and clusters which are commonly heard in everyday speech are not covered in this discussion. The effect of this on the proposed orthography is examined in chapter 7.

## CHAPTER 3

### Distribution of Phonemes

In the following sections we will examine the distribution of the phones given overleaf and account for any allophonic or conditioned variation. As will be demonstrated, Bagobo Klata has sixteen consonant phonemes and five vowel phonemes.

#### 3.1 Phoneme Charts

##### Phonemic Inventory of Consonants

	bilabial		alveolar		palatal	velar		glottal
plosive	p	b	t	d		k	g	ʔ
nasal		m		n			ŋ	
flap				ɾ				
fricative			s					h
approximant		w		l	j			

##### Phonemic Inventory of Vowels

	front	central	back
close	i		u
mid	ɛ		ɔ
near-open		ə	

### 3.2 Distribution and Contrast: Consonants

The following tables give examples of the sixteen consonant phonemes word initially, intervocalically and word finally to show distribution, and in identical or analogous environments to establish phonemic contrast:

	#__	V__V	__#
p	/pəŋeŋ/ ['pəŋeŋ̄] <i>gap.in.teeth</i>	['ʔepəŋ] <i>grasshopper</i>	['həŋɔ̄p̄] <i>watermelon</i>
b	['bəŋeŋ̄] <i>string.beans</i>	['libu] <i>female</i>	['ʔukɔ̄b̄] <i>eggshell</i>
m	['mənɔ̄] <i>whetstone</i>	['himud̄] <i>philtrum</i>	['tɛlum] <i>papaya</i>
w	['wɛɔ̄] <i>shoulder</i>	['bɛwiŋ] <i>lemongrass</i>	['lɛw] <i>cloud</i>
t	['tɛŋɛ] <i>village</i>	['pitow] <i>quail</i>	['kuliṯ] <i>skin</i>
d	['dɛʔu] <i>leaf</i>	['jɔ̄dɛ] <i>chair</i>	['muʔud̄] <i>pulse</i>
n	['nɛnɛm] <i>taste</i>	['menes:] <i>bead</i>	[pɛkɛ'wɛn] <i>cup</i>
s	['sɔʔɛ] <i>joint</i>	['lɛsɛj] <i>difficulty</i>	['luʔis:] <i>bruise</i>
l	['lɛgɛṯ] <i>sea</i>	['pɛɔ̄k̄] <i>wink</i>	-
r	-	['mirɔ̄p̄] <i>blinking</i>	-
k	['kɛluʔ] <i>ladle</i>	['ʔɛkɔ̄ŋ] <i>tail</i>	['bɔ̄s:ɛk̄] <i>ground</i>
g	['gɛhɔ̄w] <i>ant</i>	['ʔɛgɔ̄ŋ] <i>stool</i>	['huwɛŋ̄] <i>horn</i>
ŋ	['ŋɛlɛp̄] <i>river.fish</i>	['ʔuŋɔ̄b̄] <i>finger nail</i>	['klɛwɛŋ] <i>eyebrow</i>
j	['jɛwɔ̄] <i>sunshower</i>	['kɛju] <i>tree</i>	['bɔ̄ɔ̄j] <i>house</i>
h	['hɔʔuŋ] <i>mouth</i>	['gɛhɔṯ] <i>pig</i>	-
ʔ	epenthetic before V	['tuʔud] <i>deer</i>	['tɛpiʔ] <i>wall</i>

A detailed discussion of the behaviour of [ʔ] is given in section 3.7.

Table #: Phonetically Similar Pairs

p/b	[ˈʔupus:]	'cat'	[ˈʔubus:]	'stalk'
b/m	[ˈbɛʔɔ]	'sneeze'	[ˈmɛʔɔ]	'tetanus infection'
p/m	[ˈmɛp:ut̚]	'until'	[ˈmɛm:ut̚]	'fragrant'
p/w	[ˈmipɔw]	'floating'	[ˈmiwɔ]	'about to'
b/w	[mɔˈbɔtu]	'lift up'	[kɔˈwɔlu]	'eighth'

### 3.2.1 Phoneme Summary

For ease of reference, the following section provides summary statements regarding the main behaviours of Bagobo Klata phonemes, discussion of which forms the main body of this paper.

#### 3.2.1.1 Single Consonants

The consonant phonemes which may occur in word initial, medial, and final position are:

- plosives /p/, /b/, /t/, /d/, /k/, /g/ and /ʔ/
- nasals /m/, /n/ and /ŋ/
- glides /w/ and /j/ [\*see section # for discussion of interpretation as consonants]
- alveolar fricative /s/

Glottal fricative /h/ and lateral approximant /l/ occur only word initially and word medially.

Alveolar flap /r/ occurs only intervocalically (see section #); it may occur in other positions in loanwords.

Alveolar obstruents /t/ /d/ and /s/ are formed slightly forward of the alveolar ridge but not actually contacting the teeth. Accordingly, they have not been transcribed with the dental diacritic [̪]; however there is an increased degree of stridency on /s/ due to the forward position.

### 3.2.1.2 Consonant Clusters

Consonant clusters occurring syllable initially may take the following forms:

- C1 plosive /p/, /b/, /k/, /g/ : C2 approximant /l/, or /j/.
- C1 plosive /t/, /d/ : C2 approximant /j/.
- C1 plosive /p/, /t/, /k/, /g/ : C2 approximant /w/
- C1 nasal /m/ : C2 approximant /l/, or /j/
- C1 plosive /k/ or /g/ : C2 nasal /m/ or /n/

Allowable Word Initial Consonant Clusters:

[plosive][l]	'plɛtɛk̄	wings
	'bluʔu	hemp
	'kligi	eagle
	'glɔdɔj	vine.spinach
[plosive][j]	'pjɛs:u	javelin
	'bjɔʔɔ	year
	'kjɛb:ɛd	millipede
	'gjɛwɛ:	type.of.bamboo
	tjɛ	

	djə	
[plosive][w]	'pwɛles:	forest
	'kwɛɔ	earthworm
	'gwɛli	other
	'twɛŋɛʔ	help.INF

[m][l]	['mlɛɛɛ]	thousand
[m][j]	['mjɔj:ɔ]	shame
[g][nasal]	['gnɔʔɔs]	noise
	[gmɛ̃wɛɛ̃]	dispute
[k][nasal]	['kɱɪt:ɔ]	can.see
	['kɱɛnɛ]	be.left.behind

Consonant clusters may occur mid-word across syllable boundaries or as a syllable onset.

The total number of consonants may not exceed three.

/ʔɛs.tɛ/ 'and'

/ʔlu.gwɛʔ/ 'outside'

/ʔmim.plɛ/ 'mixing'

Consonant clusters may not occur syllable finally.

### 3.2.2 Plosive Allophones

Characteristically for philippine languages, plosive phonemes realise as both released and unreleased phones in complementary distribution. The unaspirated, released forms [p], [b], [t], [d], [k], [g] occur in syllable onsets; unreleased equivalents occur syllable finally. Only the velar plosive /g/ is represented in the dataset occurring in a word medial syllable coda outside of a reduplicated section. It's behaviour here is consistent, being realised as [g̚].

Plosives in word medial syllable coda:

[tiḡ̚.kə]	/tigkə/	'whole'
[tɛk̚.'tɛk̚]	/tɛktɛk/	'gecko'
[lɛk̚.'lɛ.kə]	/lɛklɛkə/	'comeuppance'

Syllable codas in reduplicants also realise as the unreleased plosive. It seems logical therefore to conclude that unreleased equivalents would occur in the syllable coda across the group if further investigation were to provide examples. For simplicity, unreleased allophones will not be transcribed through the rest of this paper unless the discussion specifically warrants this.

The glottal plosive functions as a phoneme in it's own right but may also be present epenthetically (see chapters 5 and 6 for full discussion).

### 3.2.3 Relations between /r/ and /d/

It is possible to argue that /r/ should not be considered a phoneme in its own right but an allophone of /d/. Allophonic variation between the flap and the voiced plosive occurs in many philippine languages, particularly Tagalog (upon which the national language Filipino is heavily based).

t/d	[ˈmɐm:ɛd̺]	'grimace'	[ˈmɐm:ɛt̺]	'sample'
t/s	[ˈminit̺]	'hot'	[ˈminis]	'sweeping'

The variation in Tagalog is consistent and strict, with [d] becoming [r] intervocalically or between a vowel and a pseudovowel (/j/ or /w/). The range of the process is limited to the phonological phrase and is caused by the spread of feature [+continuant]<sup>9</sup>.

In Bagobo Klata, however, we find /d/ occurring in all positions and patterning consistently with the other plosives.

/dɛʔu/ 'leaf'	/jɔdɛ/ 'chair'	/ʔɛndɛʔ/ 'NEG.EXIST'	/muʔud/ 'pulse'
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/r/ is found only intervocalically, as in /mirɔp/ 'blinking'. There are analogous pairs (/mɛdu/ 'ploughing' versus /lɛrug/ 'pink'), but these are not numerous and exist alongside examples of free variation (/hɔdɔʔ/ ~ /hɔrɔʔ/ 'stop.IMP'). It is impossible to be sure without re-eliciting the examples whether the analogous pairs show true phonemic distinction or whether the speaker was simply articulating the underlying form carefully at the time. There may even be some dialectal variation.

Conditioned variation is also evident morphophonemically.

/gɛɛʔ dɔ/ 'enough!'	/gɛɛʔ kurɔ/ 'I have enough'
/dinni/ 'DEM.PROX.OBL'	/hu-/ + /dinni/ → /hurinni/ 'coming.here'

<sup>9</sup> I have discussed this phenomenon in more detail here:

The grammatical particle /dɔ/ realises as /-rɔ/ when preceded by a vowel. Likewise, we see the addition of a vowel final prefix causing the onset of the root to change from /d/ to /r/. However, in the example noun phrase below, the addition of the plural marker does not cause the initial /d/ of the following noun to change, even though it is between two vowels.

/ʔεη	bε	dite	nεη	bjəηηεʔ	ηɔ	bε	libu/	...
'FOC	PL	name	GEN	children	-L-	PL	female'	...

Although they are both grammatical particles, /dɔ/ is a clitic whereas /bε/ is not. This suggests that variation only occurs within the phonological word and not across the phonological phrase.

The fact that /d/ and /r/ are known to be allophones in intervocalic environments in related languages, combined with the scarcity of analogous pairs, the limited distribution of /r/, and the presence of demonstrable conditioned variation argues for a non-phoneme interpretation for /r/.

However, unconditioned free variation within the root is permissible in Klata, where it is not in Tagalog. Also, the range of influence is much smaller, being limited to the pword rather than the pphrase. These facts, combined with the impossibility of demonstrating definitively that the few analogous pairs are not legitimate, leads me to conclude that [r] is indeed a phoneme, albeit a rare one. It is probable that the same phonological process is occurring here as in Tagalog (i.e. feature spreading of [+continuant]) but conditions in Klata are not strict and depend rather on speaker preference and/or speed of utterance. Additionally, speakers were able to easily distinguish between /d/ and /r/; this became very apparent during orthography discussions where there was consensus that /r/ needed to be included in the alphabet.

### 3.2.4 Relations between /s/ and /h/

Bagobo Klata realises only two fricative phonemes: /s/ and /h/. The alveolar fricative /s/ may occur in any environment, however the glottal fricative /h/ occurs only syllable initially. Furthermore, it may not occur as a geminate. As will be discussed in section #, consonants which exhibit phonetic length are interpreted as sequences of two identical consonant phonemes i.e. [ˈpləbːɐŋ] → /pləbbɐŋ/. Where a geminate consonant occurs, the syllable break is taken as occurring in between i.e. /pləb.bɐŋ/. The fact that /h/ may not be geminated, then, is consistent with its restriction from appearing in a syllable coda.

Where geminate /h/ would be generated due to affixation, it instead realises as /s/.

/hulat/	‘write.INF’	/pɔ-/ + /hulet/ → /pɔhulet/	‘write.down’	/tɔC-/ + /hulet/ → /tɔhhulet/ → /tɔssulet/	‘spelling’ (noun)
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Phonemic contrast between /s/ and /h/ can be demonstrated through the existence of analogous pairs, for instance:

[ˈtuse:]	‘use’	[ˈbuhɐw]	‘ghost’
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Therefore, we can say that the substitution of geminate /h/ with /s/ is not due to allophony.

The link between the two fricative phonemes is, however, also present in other circumstances. Free variation intervocally between /s/ and /h/ has been observed in certain words, for example:

/məsi/ ~ /məhi/ → ‘salty’
/sirib/ ~ /helib/ → ‘Sirib’ (NProp)

In situations where variation is permissible, a slight preference for /s/ over /h/ was observed in the area around Sirib and for /h/ over /s/ in the Calinan/Tamayong area. This suggests

there may be some dialectical variation, which would be interesting to look into further in the future.

Another point of connection appears if we compare some common Tagalog and Visayan words with Klata.

<i>Tagalog</i>	<i>Klata</i>	<i>English</i>
'asin'	/ɔhin/	'salt'
'siko'	/hikkɔʔ/	'elbow'
'sulat'	/hulɛt/	'write'
'suntok'	/huntuk/	'punch'
<i>Visayan</i>	<i>Klata</i>	<i>English</i>
'sanggot'	/hanggot/	'sickle'

This may be a case of loan words from Tagalog/Visayan being adapted to fit Klata phonology. This phenomenon occurs frequently, as in the substitution of Tagalog 'kulambo' ('mosquito net') with Klata /klɛmbuʔ/. However, given the fact that these are common words, adoption is unlikely - Klata would not need to borrow a word for a body part such as 'elbow' as they would for a modern invention like a mosquito net. The more probable cause is diverging development from a common Proto-Philippine root. In either case, it shows a general preference for /h/ over /s/ in Klata. Unfortunately it is beyond the scope of this paper to investigate this historical link further.

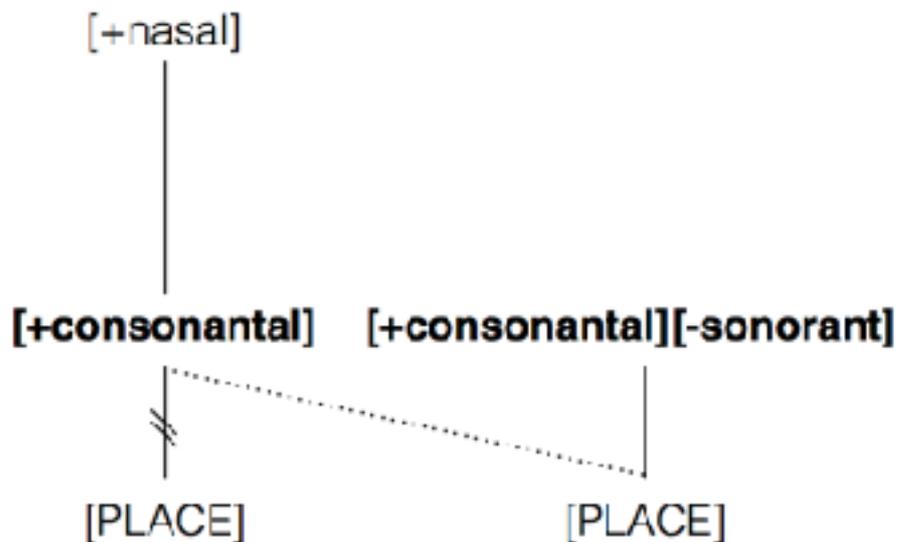
### 3.2.5 Nasal Assimilation

All nasals [m] [n] [ŋ] may occur word finally. However, where they function as syllable coda mid-word they may co-occur only with their homorganic plosive as following syllable onset.

/ʔən.ˈdɛʔ/ ‘NEG.EXIST’

[example table]

As the nasal is the weaker consonant, we assume that the nasal assimilates at the place of articulation rather than the stop.



### 3.2.6 Voiceless Nasals

One of the more unusual phonological traits which occurs in Bagobo Klata is the presence of voiceless nasals. These do not occur in neighbouring languages and are not widely reported in philippine languages as a whole.

There is no demonstrable contrast between voiced and unvoiced nasals in Klata. Voiceless nasals occur in an asymmetrical pattern and in restricted environments. [m̥] has been observed word initially and as part of a consonant cluster following an unvoiced consonant:

[ <sup>1</sup> m̥ɒɛʔ]	‘went.out’
[ <sup>1</sup> k̥m̥ɔl:ɔt̚]	‘tighten’
[ <sup>1</sup> ʔɐp̥t̚ <sup>1</sup> m̥lɔtus:]	‘four.hundred’

[ŋ̥] has only been observed occurring as part of a cluster:

[ <sup>1</sup> k̥ŋ̥ɒɛ]	‘be.left.behind’
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[ŋ̥] has not been observed at all.

Given this distribution, it seems likely that voiceless nasals are allophones of their voiced equivalents and are caused by assimilation - specifically, the spread of feature [-voice] from the preceding consonant. The above example [<sup>1</sup>ʔɐp̥t̚<sup>1</sup>m̥lɔtus:], is in fact a compound word formed from [<sup>1</sup>ʔɐp̥t̚] ‘four’ and [<sup>1</sup>mlɔtus] ‘hundred’. We can see then, that the underlying form is [m].

It is also evident that an intervening voiced segment (usually a vowel) disrupts the spread, from examples such as:

[kɔ'mutɐ] ~ [k̥m̥ũtɐ]	‘forget’
-----------------------	----------

[kəm'lotus:]	'one.hundredth'
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So we can hypothesise the rule:

nasal → voiceless / voiceless \_

Devoicing in this manner is in fact also apparent in word initial clusters consisting of a plosive and an approximant (e.g. /pjəssu/ 'javelin'). However, the devoicing here is only slight - not total voicelessness - and is much less prominent in natural speech. The voiceless nasals are characterised by a sharp, forceful expulsion of air from the nose which is easily distinguishable, whereas devoiced approximants sound only fractionally different to their normal voiced realisation. Still, this small change does support the hypothesised rule.

Furthermore, we can see that the reverse process does not occur. In examples such as [ˈtiŋkə] 'whole' or [ˈʔimpə] 'item', voicing from segments [g] and [m] does not spread to the following plosives, and neither does the voicelessness of [p] spread to the [m]. So we can say conclusively that it is feature [-voice] which spreads, not [+voice], and that spread occurs only left to right.

Additionally, this process occurs only within phonological words, not across phrases or in connected speech.

[ˈkɪŋtə]	'singing'	[ˈhɒmək ˈnænəm]	'bad.odour'
[ˈʔep:ət ˈmlɒtʌs]	'four.hundred'	[ˈgenət ˈmɛɪ]	'good.speed'

We do, however, still need to account for the presence of [m̥] word initially outside of a cluster. As will be discussed in section #, there is a preference in Klata to form consonant

clusters by deleting unstressed vowels<sup>10</sup>. This occurs frequently when the unstressed syllable is a prefix - vowel deletion removes an extrametrical unit.

If we consider the example below, we can see that there is a relationship between the presence of /h/ and a voiceless nasal.

[ <sup>h</sup> mikət̚]	‘easy’	[ <sup>h</sup> m̥ikət̚] ~ [hikət̚]	‘can.go.fast’
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A minimal pair exists between the voiced and voiceless nasal, but the voiceless nasal is also in free variation with the phoneme /h/. [m̥] occurs word initially predominantly in verbs.

Tense/aspect is expressed via verbal prefixes, so we can hypothesise that the underlying form involves one of the following:

[hV-] + [mikət̚] → [hVmikət̚] → [hmikət̚] → [hm̥ikət̚] → [m̥ikət̚]

[mV-] + [hikət̚] → [mVhikət̚] → [mhikət̚] → [m̥hikət̚] → [m̥ikət̚]

Since it has already been established that assimilation occurs left to right, the first suggestion is the most probable. The phoneme /h/ has never been observed occurring in a cluster anywhere else in the language, so its deletion here would be consistent. Only the loss of voicing indicates its underlying presence.

The orthography decision made at the workshop further supports this. The delegates were aware of the difference between [m], [n], [m̥] and [n̥] but did not feel that [m̥] and [n̥] needed to be represented in the orthography. They were also naturally inclined to write [m̥ikət̚] as ‘hmikat’, which suggests that they are intuitively aware of the deleted underlying /h/.

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<sup>10</sup> This tendency, along with voiceless nasals, is not common in the languages of Mindanao.

### 3.2.7 Complementary Distribution /h/ and /ʔ/

Phonemes /h/ and /ʔ/ appear in the following environments:

/h/			/ʔ/		
#hV	/ho.ʔuŋ/	'mouth'	Vʔ#	/tɛ.piʔ/	'outer wall'
V\$hV	/ge.hot/	'pig'	V\$ʔV or Vʔ\$V	/tu.ʔud/ or /tuʔ.ud/	'deer'
(#hC	/hmu.ni/	'hiding')	Vʔ\$C	/mɛ.lɛʔ.gnɛw/	'diluted'

/h/ is attested only as syllable onset. /ʔ/ is attested univalently only as syllable coda word finally. In this position it is always present, even in connected speech.

e.g.

/ʔ/ does appear word medially, however the position of the syllable break is ambiguous.

Generally, Klata exhibits a preference for maximising the onset - so we would syllabify as /tu.ʔud/. However, since the only univalent position of /ʔ/ is syllable finally, it would also be possible to syllabify as /tuʔ.ud/ - both CV and CVC are allowable as word initial syllables.

Glottal plosive is also present syllable finally mid-word preceding a consonant across a syllable boundary, as in /mɛ.lɛʔ.gnɛw/ 'diluted'. It is not possible to say with complete certainty whether the /ʔ/ in this example is present in the underlying form or epenthetic. A /ʔ/ may be inserted mid-word in order to disambiguate a syllable break, as shown in the formation of compound numerals and during prefixation (see section #).

Eg komlala and komlotus;ko'uwwo, but not kotollu

In these environments, the glottal plosive causes loss of voicing on the following nasal, as would be consistent with the rule posited in 3.2.2.7. It's insertion here preserves the integrity of the root from resyllabification and avoids breaking up the head of the foot (see section ). So, it is demonstrable that /ʔ/ may be epenthetic mid-word, but whether this is so

in all or just some cases is uncertain. One would need, for instance, to determine whether /  
mɛ.lɛʔ.gnɛw/ is monomorphemic or not.

The glottal plosive realises phonetically on vowel-initial words when spoken in isolation or  
in connected speech following a word final vowel, as in:

Eg

Eg

Eg

The inconsistent presence of word initial /ʔ/ as compared with the consistent appearance of /  
h/ word initially and /ʔ/ word finally suggests that /ʔ/ is epenthetic in a word initial  
environment. It's insertion avoids unallowable V onsets and VV sequences across word  
boundaries.

It appears, then, that /h/ and /ʔ/ are in complementary distribution; the fricative being  
present syllable initially and the glottal being present syllable finally. However, despite  
being phonetically similar, it is unlikely that they are in allophonic variation. The fact that  
both may occur mid word (despite ambiguous syllable boundaries) and the existence of  
minimal pairs such as:

/lɛhi/ 'completely empty'      /lɛʔi/ 'male'

argues that they are separate phonemes. It is possible that all mid word glottal plosives, not  
just those occurring at morpheme boundaries, are epenthetic. However, since in an  
intervocalic and word final environment /ʔ/ may cause feature spreading (see #), I think it  
more likely that it is present in the underlying form at least some of the time.

Since the word initial epenthetic consonant of choice is /ʔ/ and not /h/, allophony is further contraindicated - if /ʔ/ were in true complementary distribution with /h/ and totally prohibited from the syllable onset, epenthesis here would not be possible.

The lack of geminate /ʔ/ also argues for epenthesis. The most logical explanation for this is that /ʔ/ is prohibited somehow from appearing as C.C. However, since it demonstrably occurs as C.CC as in /mɛ.lɛʔ.gnɛw/ there is no reason it couldn't also be in a sequence of just two. The only restriction that would prevent C.C is if /ʔ/were barred from the syllable onset in conjunction with a consonant.

### 3.2.8 Reduction of glides v glottals midword

Dajit - det, daʔit, no change.

Ko'appat v kolappat - free variation

### 3.3 Distribution and Contrast: Vowels

The following tables give examples of the five vowel phonemes word initially, intervocalically and word finally to show distribution, and in identical or analogous environments to establish phonemic contrast:

Table #: Phoneme Distribution

	#__	C__C	__#
i	[ʔinɔ] <i>mother</i>	[pipi:is:] <i>small</i>	[bin:i] <i>rice.seedlings</i>
ɛ	[ʔɛʔɛ] <i>yes</i>	[bɛ'lɛd̃] <i>riverbank</i>	[ʔɛj:ɛ] <i>DEM.MED</i>
u	[ʔun:i] <i>sound</i>	[lumut̃] <i>mountain</i>	[nɛpu] <i>clothes</i>
ɔ	[ʔɔmɔ] <i>father</i>	[gotɔŋ] <i>aubergine</i>	[limɔ] <i>five</i>
ə	[ʔəm:ə:] <i>tarsier</i>	[lələk̃] <i>friend</i>	[jupə] <i>scorpion</i>

Table #: Phonetically Similar Pairs

i/u	[tuli]	<i>earwax</i>	[tulu]	<i>lesson</i>
	[mjik:ɛt̃]	<i>will.be.tied</i>	[mjuk:ɛt̃]	<i>will.be.hit</i>
i/ɛ	[lid:ɔ]	<i>slide.INF</i>	[lɛd:ɔs]	<i>slip.over.INF</i>
ɛ/ɔ	[lɛpɛs]	<i>knife</i>	[lɛpɔs]	<i>sibling</i>
u/ɔ	[buŋɔ]	<i>fruit</i>	[bɔŋɔ]	<i>deaf</i>
ɔ/ə	[ʔɛwɛk̃]	<i>hips</i>	[ʔɔwɛk̃]	<i>black.hawk</i>
ɛ/ə	[mɛmɛ]	<i>ridicule</i>	[mɛmɛ]	<i>calf</i>

### 3.3.1 Quality

Bagobo Klata displays five vowel phonemes: close-front /i/, close-back /u/, mid-front /ɛ/ (realising as [e] ~ [ɛ]), mid-back /ɔ/ (realising as [o] ~ [ɔ]), and open-central /ɐ/. Although recordings were made, environmental restrictions (a wooden house surrounded by animal/traffic noise) unfortunately resulted in files which were not of sufficient quality to allow conclusive acoustic analysis. It has therefore not been possible to confirm the exact respective ranges of the vowel phonemes.

Visayan and Tagalog, the major LWCs of the area, historically had only three vowel phonemes: one front unrounded, one back rounded and one central. However, due to influence from the colonial languages of English and Spanish during early writing development, their alphabets now include (and the languages themselves are considered to include) five vowels. Spelling is not particularly consistent, with ‘o’ or ‘u’ being used interchangeably to denote the front vowel and ‘i’ or ‘e’ likewise for the back vowel. During the orthography workshops we found that the older community members had no difficulty distinguishing between the five Klata vowels in the writing practice. The younger people who have grown up completely bilingual in Visayan, however, struggled to distinguish between /o/ and /u/, and /i/ and /ɛ/ word finally. When prompted with the question “is this the same vowel used earlier in the word?”(as in the example below), they were then able to make the distinction.

/ˈbjɔʔu/	‘type.of.tree’	/ˈbjɔʔɔ/	‘year’
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A minor occurrence of vowel harmony in extrametrical grammatical morphemes is also present. This can be particularly observed on the location, proper noun direct case, and plural markers.

The unstressed vowel of the proper noun direct case marker varies between [ɔ] and [ɐ] depending whether the first vowel of the following word is rounded or unrounded.

Determining the underlying form is fairly difficult on phonological grounds, but /hɔ/ was consistently given in careful speech during elicitation so would seem the logical choice.

[hɔ]	['ʔuri]	[hɐ]	['ʔɛpu]
'NProp.Sg.DIR'	'Uri'	'NProp.Sg.DIR'	'Apu'

The unstressed vowel of the location marker varies between [ə] and [ɔ] depending on the height of the following vowel. High vowels produce the schwa, the open vowel produces [ɔ] and the mid vowels may produce either in free variation. This is particularly interesting as [ə] has not been observed occurring outside of an extrametrical syllable.

[tə]	['ʔino]	[tə]	['kɔl:inə]	[tə]	['lugwə]
'LOC'	'mother'	'LOC'	'Calinan'	'LOC'	'outside'
[tɔ]	['dɛl:ɔm]	[tɔ]	['ʔɔmɔ]		
'LOC'	'inside'	'LOC'	'father'		

Since the phone [ə] does not occur elsewhere, it seems logical to consider /tɔ/ the underlying form of the location marker, with the schwa being produced by assimilation to the height of the next vowel.

The plural marker realises as either [bi] or [bɛ]. This appears to be free variation with no discernible pattern since the same noun may be paired with either [bɛ] or [bi] by the same speaker at any time.

I am inclined to consider the underlying form of the plural to be /bi/. The only noted dual form in the dataset is given below. Instead of simply deleting the vowel, it has coalesced with the glottal stop to produce /j/. Since /j/ is the consonant realisation of the high vowel /i/, this suggests that /bi/ is the underlying form.

/bi/ + /ʔɛŋŋɛʔ/ →	/biʔɛŋŋɛʔ/ →	/bjɛŋŋɛʔ/	/bi bjɛŋŋɛʔ/
'PL' + 'child'	'two children'	'two children'	'three or more children'

The fluidity of the quality of the vowel in unstressed, especially extrametrical, syllables is consistent with the language's overall disregard for unstressed vowels. The tendency is to delete this vowel wherever possible (either through forming a consonant cluster word internally or by attaching a floating consonant to the margin of another word - see section #).

/kɔ-/ + /mutɛ/ → /kmutɛ/	'forget'
/pəjɛ/ + /ŋɔ/ → /pəjɛŋ/	'big + adj.L'

There was disagreement among the participants of the workshop as to what the underlying form of these three particles actually was - or, indeed, if they actually had a proper form.

This reflects the level of attention (or rather lack thereof) generally paid to this type of vowel. Since the consonant carries the lexical load, what the vowel happens to be or even if there is a vowel at all was considered irrelevant.

### 3.3.2 Laryngalisation

The dataset contains examples of laryngalised vowels. These have been transcribed using the [i̠] diacritic.

[ˈput̪i̠ʔ]	‘white’	[ˈd̪u̠ʔu̠]	‘DEM.DIST.OBL’
[ˈt̪ɛp̪i̠ʔ]	‘outer wall’	[ˈbl̪ɛʔɛ]	‘lizard’

The glottis is tense but not closed, resulting in less force than standard ‘creaky’ voice. The mouth opening is narrow and the tongue slightly raised. Since this phenomenon only occurs in the presence of a glottal plosive /ʔ/, we can attribute it to assimilative tension in the larynx. Therefore, these vowels should not be regarded as phonemes.

### 3.3.3 Nasalisation

Nasalisation is present on vowels in the following environments<sup>11</sup>:

- Following syllable onsets [gm], [gn], [k<sub>̃</sub>m], and [k<sub>̃</sub>n].<sup>12</sup>
- Following [m̃]. [ŋ] and [ŋ̃] are not attested occurring as isolated consonants.
- Following [ŋ̃]. Nasalisation does not occur following [m:] or [n:].

Since nasalised vowels occur in restricted environments, all of which contain a nasal consonant, it is logical to conclude that the vowel is assimilating to the consonant and therefore nasalisation is not phonemic.

Not all nasal environments, however, cause nasalised vowels. The three environments listed above can be characterised as

- (a) containing a velar plosive and a nasal,
- (b) containing a syllable initial [m̃] or
- (c) containing a geminate velar nasal<sup>13</sup>.

In section 3.2.2.7 we established that the most likely underlying form of [m̃] was [hm], with voicelessness caused by feature spreading from the fricative. This being so, we can say that

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<sup>11</sup> Phonetic notation is used in this section since discussion covers the non-phoneme voiceless nasals

<sup>12</sup> The clusters [gŋ] and [kŋ] are not attested in the dataset. This is not surprising since the above four clusters are coarticulated (see ch4) - since [gŋ] and [kŋ] are homorganic, coarticulation is not possible.

<sup>13</sup> See section # for interpretation of long consonants as a sequence

all environments which cause nasalisation of a vowel contain a consonant cluster. Lexical items containing only nasal consonants in isolation do not display nasalised vowels.

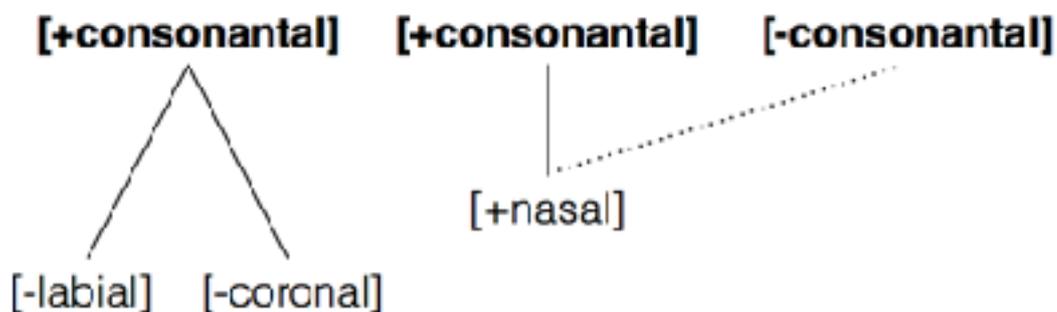
We still, though, need to account for the fact that assimilation is only incited by [ŋ:] and not [m:] or [n:], which are also clusters phonemically. Since [ŋ:], [m:] and [n:] are all nasals, the differentiating factor cannot be related to the manner of articulation; it must be the place.

[ŋ:] is the velar nasal, just as the plosives in environment (a) are velar. We cannot, however, narrow the rule down to only velar (i.e. [+dorsal]) consonants - we must also account for [h]. This then gives a second constraint that one of the consonants in the cluster must have features [-labial][-coronal].

A further constraint presents itself when we consider that only the combination C1 [-labial][-coronal] C2 [+nasal] incites nasalisation of the vowel. Any other combination of features e.g. a nasal followed by a velar plosive as in ['hɛŋgɔt̃] 'sickle', realises as the regular vowel.

Considering these three constraints, we can thus hypothesise the rule:

$V \rightarrow \tilde{V} / *CC\_$  where C1 is [-labial][-coronal] and C2 is [+nasal].



Additionally, we can see from comparing the examples below that spread of feature

[+nasal] occurs left to right.

[mɛlɛʔgnɛw] ‘diluted’

[<sup>1</sup>gmɔlɔŋ] ‘praise’

[<sup>1</sup>gnɛʔɛt̚] ‘omen’

There are no examples of nasalisation spreading across word boundaries; this process is confined to the phonological word. It continues from the cluster until it is blocked by a word boundary or a consonant. The dataset contains examples of blocking by plosives and approximants (above and [<sup>1</sup>gmɔpit̚] ‘favour’) and continuance through [nasal] and [ʔ] (above and [<sup>1</sup>gmɛmɛŋ]). Unfortunately, the dataset does not yield examples showing the effect of [r], [s], [j], and the velar obstruents. We have insufficient data to deduce a definite rule but it seems reasonable to hypothesise on the evidence we do have that all consonants with an oral articulator will stop the spread of feature [+nasal].

## CHAPTER 4

### The Syllable

#### 4.1 Summary

The basic syllable in Bagobo Klata consists of a simple nucleus of one vowel, which may be filled by any of the vowel phonemes. Vowel clusters may not occur either in the nucleus or across syllable boundaries. The syllable patterns V and VC may only occur word initially. In cases where a word-initial vowel occurs either in isolated speech or in connected speech following a word-final vowel, an epenthetic glottal plosive is present. Thus, the basic syllable realises as the universal type CV.

No more than two consonants may occur in the onset; the coda may consist of no more than one consonant. For the basic syllable types (CV and CVC) all consonant phonemes may optionally fill the syllable onset position<sup>14</sup>. The syllable coda position may be optionally filled by any consonant except /r/, /l/, or /h/. Examples of patterns (C)V and (C)VC are given in tables # - #. Direction of syllable construction has no differing results and is therefore indeterminate.

Consonant clusters may occur in the syllable onset or across syllable boundaries. Word-initially, a cluster may not occur in any number exceeding two. Word-medial clusters occur often in loan words and across syllable boundaries. Most commonly these are in sequences of two but may go up to three, as in /mɛ.lɛʔ.gnɛw/ ‘diluted’. Considering these constraints, we may say then that the allowable syllable patterns in Bagobo Klata are (C)V, (C)VC,

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<sup>14</sup> It should be noted that [r] is attested in onset position only intervocalically, except in loanwords.

CCV, and CCVC. Generally, where there is more than one option for syllabifying a word, onset is maximised and coda minimised.

The allowable inventory of onset consonants in patterns CCV and CCVC is more restricted than for patterns CV and CVC. Clusters within the syllable occur in two forms. Most commonly, as a bilabial or velar plosive (/p/, /b/, /k/, /g/) or bilabial nasal (/m/) followed by an approximant (/l/, /w/, /j/). More rarely, as a velar plosive (/k/, /g/) followed by a bilabial or alveolar nasal (/m/, /n/). Examples are given in the tables on pages #. For further discussion on consonant clusters and geminate consonants, refer to section 4.3.3 and 4.3.4.

## 4.2 Syllable Patterns

The following tables give examples of each allowable syllable type and their allowable position in the word. CV and CVC are the most productive and mobile syllable types.

	CV	
monosyllabic word	/hɔ/	‘NPROP.ABS’
word initial	/ˈŋu.mə/	gums
word medial	/tɛ.lə.ˈʔɛ.wɛt̃/	‘midwife’
word final	/ˈmɔ.lɔ/	light

	CVC	
monosyllabic word	/ˈlɛw/	‘cloud’
word initial	/ˈtʌm.bɛ/	chili.pepper
word medial	/sɛ.ˈlɛm.bɛg/	blight
word final	/ˈbɛ.bɔŋ/	door

	CCV	
monosyllabic word	not attested	
word initial	/ˈbli.lɛ/	crossbeam
word medial	/tɛ.ˈklɛ.si/	classroom
word final	/ˈmim.plɛ/	mixing

	0	CV	CVC	V	VC	CCV	CCVC	CVV
CV	x	x	x			x		x
CVC	x	x	x	50		x	x	x
V	x							

					CCVC		
monosyllabic word					/gwem/		'nevermind'
word initial					/'plʌp.pʊŋ/		pompom
word medial					not attested		
word final					/mɛ.lə?.'gnɛw/		'diluted' (adj.)
	allowable word positions						
		M	1	2	3	4	5
	CV	x	x	x	x	x	x
	CVC	x	x	x	x	x	
	V	x	x				
	VC	x	x				
	CCV	/	x	x	x		
	CCVC	x	x		x		
	CVV			x	x		

placeholder

Tables showing allowable position in the word and which syllable type may follow which (y line = preceding syll, x line = following syll).

Not sure if these should be included or not, currently included  
debated WF CVV pattern if long vowel is interpreted as a

### 4.3 Ambiguous Segments and Sequences

The following sections discuss the possible interpretations of ambiguous segments and sequences evident in Bagobo Klata.

#### 4.3.1 Semivowels

Bagobo Klata evidences both the high vowels /i/ and /u/ and their consonant counterparts /j/ and /w/. Interpretation as consonant or vowel is dependent upon position in the syllable.

A vowel interpretation should be applied in the following environments:

- Between consonants, as in [ˈpip:is:] /pippis/ ‘small’, [ˈʔinɔ] /ʔinɔ/ ‘mother’ and [ˈlumut̚] /lumut/ ‘mountain’
- Between a consonant and a word boundary, as in [bul:i] /ˈbulli/ ‘night’ and [ˈnəpu] /nəpu/ ‘clothes’

The vowel in these environments constitutes a syllable nucleus.

A consonant interpretation should be applied in these environments:

- Intervocally, as in [ˈpəjɐ] /ˈpəjɐ/ ‘big’ and [ˈləwɔ] /ləwɔ/ ‘short’
- Between a vowel and a word boundary, as in [ˈjɔt:ɔw] /jɔttɔw/ ‘life’ and [ˈwəl:ɔ] /wəllɔ/ ‘shoulder’; [ˈbɔlɔj] /bɔlɔj/ ‘house’ and [ʔɔw] /ʔɔw/ ‘kitchen’
- Between a consonant and a vowel, as in [ˈkjɔwɐ] /kjɔwɐ/ ‘honeybee’ and [ˈkwəlɔ] /kwəlɔ/ ‘earthworm’

Here, the consonant functions as a syllable margin (for further discussion of CCV interpretation, see section #).

Approximants may occur adjacent to their vowel counterparts, as in X and X. In such cases, interpretation as a transitional glide is possible. However, examples such as /blaja/ ‘give’ cannot be explained as this and argue for the approximants to be considered full phonemes.

When given a consonant interpretation, approximants /j/ and /w/ pattern consistently with the univalent consonant phonemes in their distribution, including occurring as a geminate.

[<sup>h</sup>luj:ɔ] /lujjɔ/ ‘ginger’      [<sup>h</sup>nəw:ɔ] /<sup>h</sup>nəwwɔ/ ‘breath’

The word ‘ginger’ could be alternatively written as /luiiɔ/, /lujjɔ/, /luijɔ/. However, interpreting them as such would introduce sequences of multiple vowels, which are syllable structures for which there are no univalent examples. A doubled consonant is thus the best phonemic interpretation here.

with V interp	with C interp	English	Orthographic
'bɔi:ɛʔɔu	'bɔj:ɛʔɔw	drizzle	boyyaow
'gɪɛuɛ:	'gɪjɛwɛ:	type.of.bamboo	gyawah
'miɔi:ɔ	'mjɔj:ɔ	shame *has restriction of occurring in a place where long V do not but long C does	myoyyo
'ʔiɛɔ:	'ʔiɔwɔ:	saliva	iwoh
mɔ'ɪ:p:ɔd	mɔ'jɪp:ɔd / mɔ'ɪjɪp:ɔd / mɔ'j:p:ɔd	fiance	moyippod
'klus:ui	'klus:uj / 'klus:wj / 'klus:wi	gum	klussuy
'guɛm	'gwɛm	nevermind	gwam

### 4.3.2 Geminate Consonants

Phonetic variants with increased duration exist for all consonant phonemes except /h/, /r/ and /ʔ/. These variants occur only in word medial position.

Table #: Geminate and single consonant contrast in word medial position

The surface realisation [C:] can be interpreted as either a unit /C:/ or a sequence of two identical phonemes /CC/. A unit interpretation would conform to the allowable syllable pattern CV, but it would require introducing thirteen new phonemes. Moreover, increased duration only manifests word medially between vowels. There are no examples of [C:] occurring word initially or finally, and numerous examples of short consonants occurring in mid-word syllable boundaries. Such a restricted distribution argues against considering length to be phonemically pertinent.

A sequence interpretation requires no new phonemes. Syllable clusters may occur in Klata across a syllable boundary, as in /tum.bə/ ‘chili pepper’, so a /C.C/ interpretation would be valid. In the case of a geminated consonant, the usual process is to split the sequence in the middle. So we would interpret a word such as [ˈgləm:rə] ‘container’ to be /ˈgləm.mə/ with /m/ occurring in adjacent syllable coda and onset. These are both allowable syllable positions for the thirteen consonants which exhibit this behaviour.

A /C.C/ interpretation also, then, offers an explanation for the absence of geminate /h/, /ʔ/ and /r/. Glottal fricatives are prohibited from the syllable coda and glottal plosives from the syllable onset (unless epenthetic between two vowels). Flaps may only occur intervocally; /r.r/ would require a flap to appear next to another flap, i.e. a consonant. So

a geminate would violate the distribution patterns of /h/, /ʔ/ and /r/. A unit interpretation offers no such explanation for this absence.

Geminate consonants are present within roots (such as /pləbbəg/ ‘frog’) but also across morpheme boundaries. The table below displays how a reduplicated morpheme (reduplication being a common form of tense/aspect affixation in philippine languages) may be optionally contracted to form a geminate consonant.

e.g. Table [kɔtə'tək:ɛ] ~ [kɔ't:ək:ɛ] ‘laugh.PROG’

The fact that certain consonants with phonetically lengthened duration are demonstrably underlyingly two separate consonant phonemes gives further support to a consonant sequence interpretation rather than a unit. The presence of geminates in roots, though, shows that this is not only a morphophonemic process. Geminataion is not common to philippine-type languages but some neighbouring languages to Klata, such as Tagabawa do display it. Geminate consonants also occur only word medially in Tagabawa, for instance in <ámmà> ‘father’ (Dubois, 2006), and are interpreted as sequences. They only seem to appear in roots however, and not as a result of affixation and elision.

There is one more anomaly to account for with regard to duration. The alveolar fricative /s/ is the only consonant which appears in lengthened form word finally. This lengthening does not appear in natural connected speech, as can be seen in the following example:

[ˈgɛtɔs:]	few'	[ˈgɛ.tɔs nɐ] 'gatos na'	only a few
-----------	------	-------------------------	------------

/s/ is the only unambiguous consonant with feature [+continuant] which may occur at the end of a word. Considering this and the fact that this phenomenon has not been recorded on any other consonant, together with the lack of any univalent syllable coda consonant

clusters, it is probable that we are dealing with a process rather than an extra environment. Duration is particularly apparent in isolated words spoken deliberately and also utterance finally. The most plausible explanation is that the extra perceived duration is a consequence of the high degree of stridency observed on /s/ in general due to its greater proximity to the back of the teeth. So a transcribed word final [s:] is in fact an allophone of /s/.

### 4.3.3 Long Vowels

Another interesting feature of Bagobo Klata is the presence of word final vowels with a longer than average duration. Minimal pairs exist for each vowel phoneme, so we need to consider whether a phonemically long vowel should be added to the inventory.

Eg

Firstly, it should be noted that the extra duration is not a product of compensatory lengthening. A phonetically short vowel may occur with a phonetically long consonant and vice versa.

Eg muddu/muddu'/mudoh

It also appears in juxtaposition with the glottal stop,

Eg molo'/molo/moloh.

and is not dropped in connected speech:

[kin:ə pənəhɔn mu məsə: kəŋ:ɔ] 'Do you have time to pray later?'

Long vowels in Klata behave differently than in neighbouring languages. For instance, in Tagabawa long vowels occur in open syllables in any part of the word (Dubois, 2006). Most open syllables in Klata, on the other hand, have vowels of regular duration.

There are three possible interpretations of [V:]

- (a) as a phonemic long vowel /V:/
- (b) as a two vowel sequence /VV/
- (c) as an underlying /VC/ where the final consonant has coalesced.

If we consider option (a) (unit interpretation), we would expect the long and short equivalents to occur either in the same environments or in complementary distribution.

What we actually find is that there are minimal pairs (so no allophony) and heavily restricted environments on long vowels (word final only), where short vowels may occur in all positions. Additionally, /V:/ would require five new phonemes - doubling the vowel inventory. This interpretation, then, does not seem practical.

Moving on to environment (b), we are presented with two further options. If we choose to interpret [V:] as a vowel sequence, a word such as [ˈbæsə:] ‘squash’ could be divided either as /bæ.sæ/ or /bæ.sə.ə/. This presents us either with a branching nucleus CVV or a single vowel syllable V. Both of these constitute new syllable patterns for which there are no unambiguous examples. In section #, we in fact argued that the glottal stop could occur epenthetically mid-word specifically to prevent a VV sequence.

Option (c) then becomes the most likely interpretation. This would present the above example as /bæ.səC/, with syllable pattern CV.CVC. This is both a univalent and highly productive word pattern (e.g. /tɔ.muk/ ‘mosquito’). The question then becomes: which consonant is it and why has it effectively disappeared?

The most likely candidates are semivowels /j/ and /w/, fricatives /s/ and /h/, and liquids /l/ and /r/. These are the six consonant phonemes present in the inventory which display feature [+continuant]. If coalescence with a preceding vowel phoneme has occurred leaving only duration in the surface form, it is most likely that continuance is the feature which has remained.

We can immediately exclude /s/, /j/, and /w/ since these are seen to occur word finally as regular phonemes.

Eg

Word final [i:] and [u:] could be taken as realisations of /ij#/ and /uw#/ given the conclusion reached in #, however this would not account for the other three vowels.

Neither /h/ nor /l/ are seen to occur word finally (though they may occur word initially and medially); /r/ is only present intervocalically. In the previous section we saw that /h/ and /r/ may not form a geminate - /h/ because it cannot occur in a syllable coda and /r/ because it may not be in sequence with another consonant. This constraint against /h/ in the coda would argue against it being the mystery consonant. Geminate /l/, however, is evident (e.g. /kelled/ ‘slope’), meaning that syllable final /l/ is permissible. Equally, the restriction which precludes a geminate flap does not necessarily prevent occurrence as syllable coda even though we have no examples of this in the dataset.

The glottal fricative could be a good candidate as it is often synonymous with a voiceless vowel (only syllabicity differentiating the two). However, in this case underlying VV̥ or VV̥ is unlikely, not only because of the impermissibility of a vowel sequence but because [V:] does not realise as particularly breathy - voicing remains constant. Furthermore, if we consider the hypothesis given in # then the below instance of full reduplication should evince a voiceless nasal.

Eg Malah → malamala and moloh → molomoloh

Since it does not, either there is something else causing the voiceless nasals or /h/ is not the culprit here. Section # also established that there is a relationship between /h/ and /s/ - given this, it might be expected that word final /h/ would become /s/ rather than a zero phone.

Therefore, /h/ is not a strong option for the deleted word final consonant.

The liquids /l/ and /r/ differ only by the feature [ $\pm$ lateral]. Unlike /h/, they are both voiced and could conceivably occur syllable, and thus word, finally. Looking slightly further afield, if we consider the comparisons in the table below, we can see that there is some correspondence between the Tagalog liquids and Klata vowels with long duration.

Table:

Whether these words came directly into Klata from Tagalog, or some from Tagalog and some from Spanish, or some from a common proto-philippine root, is not determinable in the scope of this study. Such correlation, however, does support the choice of /Vl/ or /Vr/ as the underlying form of [V:].

It is also possible that both /l/ and /r/ are succumbing to a lenition process. The sequence of changes which would cause this word final consonant to be gradually weakened, eventually coalescing entirely, could be occurring in parallel. Lenition moves from obstruence to sonorance in a sequence resembling obstruent  $\rightarrow$  nasal  $\rightarrow$  liquid (lateral)  $\rightarrow$  rhotic  $\rightarrow$  glide  $\rightarrow$  vowel. In this case weakening would occur as [Vl]  $\rightarrow$  [Vr]  $\rightarrow$  [Vɹ]  $\rightarrow$  [V:], with the first step present or absent depending whether the original syllable is underlyingly /l/ or /r/.

There is some evidence of dialect variation between /l/ and /r/ in Klata. The proper noun [si<sup>h</sup>'rib] is pronounced as such in Sirib itself but may be said [hi<sup>h</sup>'lib] in the Tamayong/Calinan area. This further suggests a continuum between /l/ and /r/.

There is also a possibility, since /h/ may pattern cross-linguistically as either a fricative or an approximant due to its lack of oral closure, that /h/ may also be included in this process.

The sequence would then look like: [Vl] → [Vr] → [Vh] → [V:]. This hypothesis would neatly account for all of the phonemes under question but still leaves us with the syllable position restriction of /h/ and the lack of spreading of [-voice] to overcome. If /h/ were, however, not the underlying phoneme for that particular example and instead a transitional phonetic phase, it might circumvent the phonemic constraints. This is not a particularly strong argument though.

In conclusion, the best interpretation (without adding a new syllable pattern or several new phonemes) is to consider phonetically long vowels as an underlying vowel-consonant sequence, probably /Vl/ since there are univalent examples of /l/ occurring syllable finally. It might be possible to identify the coalesced consonant definitely if further elicitation were conducted.

Recently there has been discussion over whether Tagalog contains so-called ‘ghost segments’, such as root-final /h/ (see for instance Coombs, 20?). This theory accounts for the appearance of /h/ on certain affixed roots. For instance, Tagalog <basa> ‘to read’<sup>15</sup> becomes <basahin> when the patient focus suffix is added. The addition of /h/ is inconsistent though - many words simply add an epenthetic glottal plosive instead, which is predictable and not written (such as <akala> ‘to suppose’ → <akalain>).

Unfortunately, the Klata dataset on which this paper is based does not include any [V:] final roots which have been suffixed. It would be good to elicit examples occurring with perhaps the clitics /ʔu/ and /ŋɔ/ (which cohere to the end of vowel final nouns) to see how they behave or if a ‘ghost segment’ realises.

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<sup>15</sup> Klata [ˈbəsɛ:] ‘squash’ is <kalabasa> in Tagalog; Klata [ˈbəsɛ] ‘to read’ is <basa> and <basahin> in Tagalog. This further suggests that /h/ isn’t the lengthening factor.

Tg	KI	Eng
ospital ( <i>spanish</i> )	ʔospite:	hospital
doktor ( <i>spanish</i> )	dɔktɔ:	doctor
lugar ( <i>spanish</i> )	luge:	place
asukal ( <i>spanish</i> )	sukə:	sugar
salawal	səluwə:	trousers
kasal	kəsə:	wedding
dasal	dəsə:	prayer
	itule → itu:	story → tell a story

'moloʔ	rash	'molo	light	'molo:	lay.egg.PROSP
i:	'təʔi:	stay.IMP	'ləʔi	male	
ɛ:	'təʔe:	hard	'blɛʔɛ	lizard	
u:	'məpu:	argue	'm̥əpu	to.chop	
ɔ:	'nəw:ɔ:	woven.cloth	'nəw:ɔ	breath/emotion	
ə:	'mələ:	frying	'mələ:	inviting	'mələ:
					medium

	V: as unit	as VC seq	as VV seq		from?
[bəsə:]	CV.CV	CV.CVC	CV.CVV	'squash'	
[mɔ'jusə:]	CV.CV.CV	CV.CV.CVC	CV.CV.CVV	'will.clean'	
[wə'ʔs:u:]	CV.CVC.CV	CV.CVC.CVC	CV.CVC.CVV	'be.full.INF'	
[lɔg:e:]	CVC.CV	CVC.CVC	CVC.CVV	'wall.beam'	
[tɔ'l:əwe:]	CVC.CV.CV	CVC.CV.CVC	CVC.CV.CVV	'high'	laweh
[mlɛde:]	CCV.CV	CCV.CVC	CCV.CVV	'yellow'	ledeh

#### 4.3.4 Initial Consonant Sequences

A further point of interest in Klata is the frequent occurrence of word initial consonant clusters. This is very uncommon in philippine languages; even in T'boli and B'laan, the most immediately related languages to Klata, a brief transition vocoid is present between an ostensible consonant cluster. These clusters in Klata, however, have absolutely no transition element at all. Articulation overlaps to the extent that these segments have a duration comparable to univalent unit segments. Phonetically, they sound closer to off-glides, palatalisation, and post-nasalisation than consonant clusters. Despite their ubiquity, however, no unambiguous word initial clusters present themselves in the data. It is necessary, therefore, to discuss possible interpretations.

Consonant clusters occurring word initially may take the following forms (see 3.2.2.2 for full list and examples):

- C1 plosive /p/, /b/, /k/, /g/ : C2 approximant /l/, or /j/

Alveolar plosives /t/ and /d/ have been observed in sequence with /j/ in fast connected speech. /l/ has not been observed following alveolar plosives, presumably due to the overlap in place of articulation.

- C1 plosive /p/, /t/, /k/, /g/ : C2 approximant /w/

[FOOT The absence of pattern /bw/ is notable. It is possible that it is simply not represented in the dataset. However, none of the L1 speakers could identify words showing this pattern when specifically asked, which leads me to conclude that it is unallowable. Examples such as /'buwɛʔ/ 'lanzones' and /'bɛwiŋ/ 'lemongrass' do exist, which supports the argument set out in # that these consonant sequences are caused by deletion of an

intervening underlying vowel rather than consonant units with labialisation. [b] and [w] are phonetically similar enough that any articulatory advantage gained from the vowel deletion would be negated by the extra glottal force needed to sustain the vocalisation of the consonant. Therefore the underlying form still represents the optimal articulatory option and appears as the surface form. The absence of pattern /dw/ is not so easily explainable. Again, it may simply be that the dataset was not large enough but participants at the Orthography Workshop were, as with /bw/, unable to identify any univalent examples. It may be that this pattern only occurs as an abbreviation in casual speech, as with /dj/, so speakers are less consciously aware of it.]

- C1 nasal /m/ : C2 approximant /l/, or /j/
- C1 plosive /k/ or /g/ : C2 nasal /m/ or /n/

So the possible syllable initial combinations are:

Nasal + Lateral Approximant

Nasal + Semivowel

Plosive + Lateral Approximant

Plosive + Semivowel

Plosive + Nasal

Immediately it is apparent that all pertinent segments have been attested as full phonemes previously in this discussion. All combinations conform to the sonority sequencing principle, with stronger consonants (plosives and nasals) forming syllable margins and weaker consonants (nasals and approximants) occurring closer to the nucleus [FOOT: obstruent → nasal → liquid (lateral) → rhotic → glide → vowel]. We can also see that all

the phonemes which may optionally fill the second slot (nasal, lateral or glide) may be syllabic and/or occur as secondary articulation (lateral release/labialisation/palatalisation/post-/pre-nasalisation).

If we take the example [ˈbjɔʔɔ] ‘year’, the possible interpretations are:

1. /ˈbjɔ.ʔɔ/ CV.CV - unit; complex consonant.
2. /ˈbjɔ.ʔɔ/ CCV.CV - sequence with restrictions.
3. /ˈbjɔ.ʔɔ/ C̣CV.CV - sequence with syllabic consonant; may present as branching nucleus or trisyllabic /bj.ˈɔ.ʔɔ/ C̣C.V.CV.
4. /ˈbiɔ.ʔɔ/ CVV.CV - vowel sequence; may present as branching nucleus or trisyllabic /bi.ˈɔ.ʔɔ/ CV.V.CV.
5. /bV.ˈjɔ.ʔɔ/ CV.CV.CV - deletion of underlying unstressed vowel.

Option 5 is the only word pattern for which there are univalent examples, such as /mɐ.ˈbɛ.sɐ/ ‘hospitable’. All options conform to foot formation rules (see #).

#### 4.3.4.1 Option 1

Unit interpretation /ˈbjɔ.ʔɔ/ CV.CV is the first option which can be ruled out.

There are no univalent examples of complex consonants in the dataset - that is, co-articulated with a secondary point of articulation. The questionable segment is formed correctly (with the primary articulation having a greater degree of stricture than the secondary), however it occurs with all possible following vowel phonemes.

EG

Having no reference to subsequent rounded or high vowels makes secondary articulation by palatalisation or labialisation unlikely. Neither are pre- and post-nasalisation well attested in philippine languages.

Furthermore, there are unambiguous examples of surface palatalisation occurring as a result of an abbreviation of the underlying form through a deleted or coalesced vowel ([<sup>1</sup>tijə] → [<sup>1</sup>tʲə] ‘abdomen’). This makes it difficult to interpret any occurrences of these segments as units with confidence when some are demonstrably not.

We have also seen (in section #) that the rule for nasalisation of a vowel only works with a syllable initial sequence. During the nasalisation process, mid-word geminates seem to exert the same force as the ambiguous clusters. This suggests they should be interpreted similarly. Additionally, chapter 6 discussed the fact that compound roots may insert /ʔ/ in order to guard against resyllabification. If we were to interpret, for instance, the onset of [<sup>1</sup>mlələ] ‘thousand’ as a unit /m<sup>1</sup>ələ/ there is no risk of the unitary phoneme /m<sup>1</sup>/ splitting between syllables and therefore no need for the /ʔ/. If it is a sequence /mlələ/ however, assignment of /m/ to the preceding adjoining syllable becomes possible.

There are examples of word initial ambiguous segments occurring both as a mid-word syllable onset and across a syllable boundary. The combination /k/ and /l/ appears in the language name [<sup>1</sup>k<sup>1</sup>ətə]. It also appears as a syllable margin - [<sup>1</sup>lak.<sup>1</sup>la.ka] /ləkləkə/ ‘comeuppance’. If we compare this mid-word occurrence with the word for ‘classroom’ [ta.<sup>1</sup>kla.si] /taklasi/, we can see a difference. The /k/ phoneme in [<sup>1</sup>lak.<sup>1</sup>la.ka] clearly belongs in the coda since the surface form is the unreleased allophone which only occurs in syllable coda. It is seen also occurring mid-word in such examples as [ʔəj.<sup>1</sup>tə.jə] ‘might be killed’ and [<sup>1</sup>tək.<sup>1</sup>tək] ‘gecko’. There are no examples of CC clusters or double articulation word or syllable finally, so the /l/ necessarily belongs in the onset of the following syllable. In [ta.

'kla.si] however, both /k/ and /l/ occur in the onset. [FOOT: It may be significant that the latter is formed through affixation of a loanword ([ta-] + ['kla.si]) while the former is likely from CVC reduplication given the nature of the meaning. The verb 'deserve' is not in the dataset but I think it highly likely it is something like 'laka'.] The fact that this combination may occur mid-word together or split suggests that it is an underlying sequence, not a unit. This also suggests that the ambiguous sections under question may occur syllable initially, not just word initially.

Perhaps most importantly, if we take the unit interpretation we need to introduce a mind-boggling number of new phonemes (about sixteen). If we were dealing with just labialisation OR palatalisation OR lateral release then a complex consonant unit would be feasible, but in this case it is clearly not. It would be far more efficient to designate a new syllable structure.

Since co-articulation may occur independent of secondary articulation, excluding the underlying unit interpretation does not preclude a surface realisation which is phonetically co-articulated and has the same duration as a singular phoneme.

#### 4.3.4.2 Option 3:

So, taking a sequence interpretation, we can skip to the third possibility - a syllabic consonant /b<sub>j</sub>ɔ.ʔɔ/ C<sub>ɕ</sub>V.CV or /b<sub>j</sub>.<sup>1</sup>ɔ.ʔɔ/ C<sub>ɕ</sub>.V.CV.

The [consonantal] and [syllabic] features are distinct, with [syllabic] sitting higher in the hierarchy. It is possible for a phoneme to be [+consonantal] and [+syllabic]. If we choose to assign [+syll] to /m/, /n/, and /l/ when they follow another consonant - since we know that syllable initial consonants may be formed by elision - we could explain this as [+syll]

being the surface realisation of a deleted vowel. This would account for /m/, /n/, and /l/ occurring [-syll] intervocalically.

It does not, however, account for the roots where we have no reason to believe the cluster is a result of deletion and it also doesn't really work for semivowels. We previously established in section # that high vowels at syllable margins should be interpreted as consonants. The middle position in C<sub>1</sub>CV is an ambiguous spot which could be either a margin or a nucleus.

Returning to the nasalisation rule, we find that it partially holds with a syllabic nasal interpretation. The [+nasal] feature spreads across the whole branching nucleus encompassing both segments which are [+syll]. This would explain why nasalisation doesn't occur with a single nasal as it would be outside the nucleus i.e. [-syll]. However, this does not fit the behaviour of the geminate velar nasal nor account for spreading to adjacent syllables.

Finally, we again run into the problem of an absence of univalent syllabic consonants. Taken together, these issues argue against a syllabic interpretation for the second consonant.

#### 4.3.4.3 Option 4:

The fourth option presents the second phoneme in the cluster as a vowel rather than a consonant - /biɔ.ʔɔ/ CVV.CV and /bi.'ɔ.ʔɔ/ CV.V.CV. This interpretation is only applicable, however, to the Nasal-Semivowel and Plosive-Semivowel combinations. It does not account for /l/ or a nasal in second position. It also requires the admission of a new syllable structure - either CVV or V. There are no univalent examples of this syllable type. Indeed, in sections # and # we established that abutting or singular vowels are prohibited, incurring the insertion of a glottal plosive. It is not valid, therefore, to hold a vowel interpretation

So, having ruled out the unit, syllabic consonant and vowel sequence interpretations, we are left with independently established consonant phonemes. The question left is whether there is an underlying sequence - /<sup>h</sup>bjɔ.ʔɔ/ CCV.CV - with heavy restrictions on which phonemes may fill the first and second slot, or if the proper form contains a deleted unstressed vowel - CV.CV.CV /bV.<sup>h</sup>jɔ.ʔɔ/.

#### 4.3.4.4 Option 5:

Previously, we established that a consonant cluster could be formed by the deletion of an unstressed vowel

EG /kɔ<sup>h</sup>mɛʔɐ/ ~ /<sup>h</sup>kmɛʔɐ/ ‘eat.COMPL’

So we know that at least some word initial CCV sequences are only a phonetic realisation of underlying CV.CV. It does not follow, though, that because SOME sequences are a result of elision, ALL sequences are. The only univalent mid-word example of CC evident in the dataset is [ˈmim.plɐ] ‘mixing’. This shows a mid word three consonant cluster C.CC which is consistent with the allowable univalent syllable patterns: no more than one consonant in the coda and no more than two in an onset.

If we assume syncope, the possible underlying forms are:

/mim.<sup>h</sup>pV.lɐ/

/Mi<sup>h</sup>mVp.lɐ/

/mimV.<sup>h</sup>pV.lɐ/

Examples where more than one vowel is elided do not occur in the dataset, rendering /mimV.<sup>h</sup>pV.lɐ/ unlikely. Assuming that footing remains consistent (binary trochee, built right

to left), stress would shift as shown above, and would thus mean that it was the stressed syllable which had lost the vowel. This is not unknown - it occurs in the reduction of bisyllabic monomorphs such as [ˈtɪjə] → [ˈtɪ] ‘abdomen’ - but it is not the usual pattern. More commonly, it is the unstressed vowel of an extrametrical morpheme which is elided, as in [mɔˈlɛliŋ] → [ˈmlɛliŋ] ‘be happy’ from [ˈlɛliŋ] ‘happiness’.

So, there is evidence for deletion as a morphophonemic process, but for monomorphs e.g. [ˈblɪlɛ] ‘crossbeam’ it is impossible to ascertain whether the phonetic realisation is both surface and underlying form or whether there is a deleted unstressed vowel except by re-elicitation.

Moreover, unstressed vowels are not always deleted - there is a tendency rather than a requirement. It seems unlikely that a language would display a preference towards a syllable structure which is prohibited from occurring underlyingly. Geminate consonants are also formed through morphophonemic processes and they do also occur naturally in monomorphs such as [ˈbulli] ‘night’.

Cross-linguistically, insertion or deletion usually happens at a morpheme boundary in order to avoid an unallowable syllable pattern or to preserve an acceptable one. Since the above example renders three word patterns which are licit - with syllables CV or CVC and clusters occurring only at syllable boundaries - it doesn’t account for the elision of the vowel.

This would seem to suggest that /ˈmim.plɛ/ could in fact be the underlying form and that syllable initial consonant clusters are phonemically licit. In the absence of explicit evidence to the contrary, such as the free variation exhibited by [mɔˈlɛliŋ] ~ [ˈmlɛliŋ], it is sensible to take a surface form which contains a syllable and/or word initial consonant cluster at face value.

#### 4.3.4.5 Option 2:

This brings us to the only available option: /<sup>h</sup>bjɔ.ʔɔ/ CCV.CV.

As well as geminates, there are univalent examples of consonant clusters across syllable boundaries.

/<sup>h</sup>plɔb.bɛŋ/ 'frog' /kɛ.li.<sup>h</sup>bɛŋ.bɛŋ/ 'butterfly' /<sup>h</sup>ʔɛs.tɛ/ 'and'

So we know that abutting consonant phonemes can occur in Klata.

Furthermore, if we refer to Tagalog and Visayan (languages in which most Bagobo Klata speakers are bilingual), a difference in the realisation of palatalisation is apparent.

EG

Tagalog and Visayan do not have a native phoneme [dʒ] and do not allow CC clusters at all.

Klata also does not have native [dʒ], but does seemingly allow consonant clusters. As we see from the table above, Tagalog truncates [dij] to the palatal affricate whereas Klata reduces to [d<sup>h</sup>] - a palatalised consonant. This suggests that there is a fundamental difference in which syllable types are allowable and preferable, and that a word initial consonant cluster is preferable to importing a foreign phoneme.

The best interpretation for syllable initial ambiguous sequences, then, is a consonant cluster of two phonemes which cohere. They immediately abut with no underlying vowel to stop the articulation overlapping and are pronounced at the speed of a single consonant. The first slot may be occupied by a stop or nasal; the second slot, by a nasal, lateral or semivowel.

C2 must be a more sonorant consonant than C1.

## CHAPTER 5

### Stress

#### 5.1 Grammar summary

Seems pertinent at this juncture to give a brief summary of grammar essentials.

It's a predicate initial language (VSO)

Follows Austronesian Alignment typical of philippine languages. Characterised by 3 sets of markers which go before the N or NP and express its relationship to the governing head: direct (topic noun - highest structural argument in any given configuration), indirect (non-topic noun, also functions as possessive) and oblique (other nouns subordinate to first two, e.g. location, adjuncts, adverbials). There is a direct correlation between verbal morphology and nominal argument marking (whether this is 'case' as it is understood in other languages is subject of ongoing debate). Verb form tells whether the noun marked as direct is the agent patient etc ie it inflects according to the topic's semantic role. PATFOC is the unmarked verb form in Tglg. Not enough analysis done in BK to say how many different triggers there are but have found at least agent and patient.

Affixation in philippine type languages has been observed in all possible forms - that is, prefixes, suffixes, infixes and circumfixes. In the Klata data set so far only prefixes and one set of suffixes observed. Clitics display suffixation though.

These (??) are nuclear role markers, anything without this doesn't belong in the nucleus. BK also has a fourth set of pronouns/markers/Dems which function independently rather than as clitics and can form an NP by themselves; they occur in equative clauses, at beginning of main clause, or in a headless clause, flipping word order for emphasis - eng NOT equiv of ay. [eng DIR.ARG PRED] v [PRED keng DIR.ARG]. Similar to keng as attaches to highest arg.

Dir sometimes known as abs, ind is erg/gen, ta is loc/dat.

Linker (spacer) /ŋɔ/ occurs between two adjacent lexical items. Pronouns in clitic or free form can also serve this function. Helps disambiguate which predicate/constituent segment they belong with.

Particles have order based on gram function not length i.e. 'ngo' always follows 'u'.

In Tglg, intonation always unstressed on markers. Monosyllables (eg pronouns) behave phonologically like clitics. Mood etc particles are never in focus.

In Tglg: tr

example sentence

be appat do	keng totow	neng	boppeed u	neng omo ku	diyat Kollina
PL - ADJ.PRED - EMPH	DIR - NOUN	REL	PATFOC.VERB-DIR.1SG	IND - NOUN-POSS.1SG	DEM.OBL-OBL - NProp
Four	the identity	when	was.brought-I	by-father-my	here-to Calinan
I was four when I was brought here to Calinan by my father.					

ansitive has Constituent1 patient C2 agent, this is reversed for marked form (-um-/mag-);

intransitive has C1 agent. If patient C1 it's definite, if C2 it's indefinite.

In Tglg: EQ sentence - [ABS NP(X)][ABS NP(Y)]

CommentTopic sentence - adjunctive [PRED + modifiers][ERG NP + modifiers][ABS NP + modifiers][OBL] adjunctive

Clause versus NP shown by marker chosen [contrast polos keng piyyak 'there are many chicks' v. polos ngo piyyak 'the many chicks...']

## 5.2 Default Stress

Stress is shown in Klata by an increase in loudness/intensity and pitch, rather than duration.

Lexical stress is predictable. There are some exceptions, but they number less than 10 per word type from a dataset of several thousand.

EG

There are no univalent minimal pairs which differ only by stress placement, so we can say that Klata does not show contrastive stress.

The only possible exception in the dataset was:

[ˈmɛhi] ‘salty’ [mɛˈhi] ‘sayang/too bad’

however, stress can move on bisyllabic monomorphs to signal emphasis or intonation. It is also possible that there is a semantic link between the two, given their glosses.

EG

Klata has a binary trochaic foot which is built right to left. Primary stress lands on the head of the right-most foot. In most cases, this is the penultimate syllable. Secondary stress applies to alternate syllables moving right to left. Secondary stress is not suppressed in polysyllabic roots. Degenerate feet are not in evidence.

Klata displays a strong reductive preference. Syncope is present, causing the absorption of unstressed/extrametrical syllables into the onsets of stronger syllables (molalig -> mlalig; reduplicant to geminate). Apocope is also present; the particles /neŋɔ/ and /keŋɔ/ may drop their final vowel depending on the rhythm of the utterance. Functional morphemes may be

reduced to as little as their initial consonant (keng to -k) and append as codas within the phrase (ngo to ng).

Monosyllabic function words do not attract stress in a sentence; monosyllabic lexical items do. The head of the foot may be abbreviated, in which case stress shifts to the coalesced syllable. /tija/ → /tja/. Root syllables do not reduce as frequently as affixes do and compound/reduplicated roots do not reduce at all.

Stress does not automatically gravitate to closed syllables nor does it automatically change when a coda is added to create a closed syllable. This implies that Klata is not quantity sensitive.

### 5.3 Extrametrical Units

Klata displays verbal tense markers, adjectivizers, nominalizers and many other grammatical changes via affixation. This is common in philippine languages. Stress remains on the penult of the root despite the addition of most affixes.

EG

Since most trisyllabic words don't have stress on the first syllable it initially appears that Klata doesn't allow degenerate feet:

e.g. /kɔ'wɛwɛŋ/ 'spider'

But if we look further at 4 syllable words, we find that there is still no secondary stress.

e.g.

This prompts the interpretation that secondary stress is suppressed. Most polysyllabic words, however, are formed through affixation. When we look at monomorphemes and compound roots, we can see that secondary stress does appear.

This suggests that all affixes, even polysyllabic, are extrametrical.

Grammatical particles attach to preceding or succeeding words within a phonological phrase and do not affect stress. This suggests that they are also extrametrical.

Pronouns have both clitic and independent forms. Independent pronouns display stress in the same way as other lexical items.

## CHAPTER 7

### Orthography Proposal

#### 7.1 Background

During my months in Davao, I was privileged to be involved in many discussions with community members around development of the Bagobo Klata language. Two particular thoughts were expressed time and time again: the need for an agreed alphabet and spelling system, and the need to encourage children's continued use of their mother tongue.

In early 2013, Doctora. Ninie del Rosario of DepEd Region XI was instructed to instigate pilot MTB-MLE (foot: Mother-Tongue Based Multilingual Education) programmes for 11 languages in the Davao region; Bagobo Klata was among these. A series of workshops were held by DepEd to facilitate contextualisation of the elementary curriculum. Dra. Del Rosario contacted SIL in mid-April to invite them to be involved in this ongoing process. Accordingly, a number of SIL personnel, including myself, were present for portions of the 22-26<sup>th</sup> April workshop held in Davao City.

The Klata group consisted of 5 teachers, all of whom self-identified as 'half-blooded Klata'. During the event we looked at the documents which had been drafted, including what was intended to function as a primer/spelling guide. However, there were significant concerns about this document as the group had been given no guidance in producing it. A brief discussion was held regarding basic principles for alphabet design. The group was very open to advice and keen to revise their outputs, but were concerned about the timetable required by DepEd.

Following this event, Xinia Skoropinski of SILP and Dra. Del Rosario held a meeting where it was decided that the Klata pilot programme would be postponed until the following school year to allow time for proper orthography development and to identify a suitable school for the programme. A workshop had already been scheduled for 15-17th May 2013 to finalise the curriculum contextualisation, but it was decided that it would be more beneficial for the Klata group to use this time to develop an orthography. SIL was asked to facilitate this activity.

The orthography discussion was led by myself and Mr Mansueto Casquite, a literacy and education specialist, with assistance from Xinia Skoropinski as Literacy and Education Consultant. A full list of the participants, which was expanded to include 2 tribal elders and 2 proficient Klata L1 speakers, can be found in Appendix 2.

The desired output was a working orthography which could be tested in the community and eventually used to finalise the elementary school materials required by DepEd. There was also time to begin working on a spelling guide for use by adults and a primer for teaching younger children. As part of these, an alphabet chart was proposed and tested.

Participants were given a reference chart for themselves plus A4 copies of all the pictures and a recording sheet. The teachers were asked to each identify five grade 1 children to test the pictures, while the elders were tasked to ask older people if they felt the pictures were clear and culturally appropriate. The test pack also included three of the short stories which had been rewritten by the elders according to the agreed spelling rules. Participants were instructed to have volunteers read the stories and note where they had difficulty.

Feedback from these tests was considered at the follow-up workshop on 8-9th June 2013 at the SIL office in Davao City and amendments made as needed. At the end of this event

participants were provided with drafts of the primer and spelling guide to take away. Unfortunately, this was the end of my direct involvement as I returned to the UK but development of the MTB-MLE programme has continued, with the most recent meeting taking place in December 2016.

## 7.2 Working Orthography

During the development process, Smalley's (1994) principles of orthography design were discussed. The participants agreed that transferability was an important concern since the Klata exist in a profoundly multilingual context. Not only would the proposed orthography need to compliment the acquisition of literacy in other languages, but it was felt that having a writing system which resembled existing established and respected alphabets would help to raise Klata to equal status with these.

Accordingly, the existing orthographies of Filipino (as national language and medium of instruction), Visayan (as LWC), B'laan and T'boli (as the most closely related), and Obo Manobo, Tagabawa and Matigsalug (as closest in proximity and daily contact) were considered. Comparative lists of these alphabets are given below along with some additional notes. The proposed Klata orthography follows this. Sample texts are included in Appendix # to help illustrate the appearance of the proposed orthography.

Orthographies of languages in proximity to Klata:

Tagalog	Visayan/ Cebuano	Obo Manobo	Tagabawa	Matigsalug	T'boli	B'laan (Sarangani)
b	b	b	b	b	b	b
d	d	d	d	d	d	d
-	-	-	-	-	f	f
g	g	g	g	g	g	g
h	h	h	h	h	h	h
k	k	k	k	k	k	k
l	l	l	l	l	l	l
m	m	m	m	m	m	m
n	n	n	n	n	n	n
ng	ng	ng	ng	ng	ng	ng
p	p	p	p	p	-	-
r	r	r	r	r	-	-
s	s	s	s	s	s	s
t	t	t	t	t	t	t
-	-	v	-	-	-	-
w	w	w	w	w	w	w
y	y	y	y	y	y	y

grave accent mark over a final vowel	grave accent on final vowel	hyphen intervocalically or as second member of consonant cluster	grave accent mark over a final vowel	see note	grave accent mark over a final vowel	grave accent mark over a final vowel
a	a	a	a	a	a	a
-	-	-	á	-	-	-
i	i	i	i	i	i	i
-	-	-	é	-	é	é
e	e	e	-	e	e	e
-	-	-	ó	-	ó	-
u	u	u	u	u	u	u
o	o	o	-	-	o	o

Additional Notes:

Although the consonant graphemes presented above generally have similar phonetic readings, vowel graphemes may vary widely in their respective phonetic realisation (for instance the Matigsalug ‘e’ is actually /ə/)

In T’boli, word initial consonant clusters are written with an intervening apostrophe, as in b’tang (to fall) and k’dung (dust) to account for the short pseudovowel /ə/.

In Obo Manobo, geminate consonants are written as two identical graphemes. Unlike other Philippine orthographies, intervocalic glottal stops are marked and the long vowel instead is symbolised by consecutive vowel graphemes.

In Matigsalug, the glottal is written as a hyphen when between a consonant and a vowel and as an acute accent over the vowel word finally. The hyphen is also used to separate the 'n' and 'g' graphemes where they could be confused for 'ng' and for separation of word/root reduplication.

In Visayan and Tagalog, front vowels 'i' and 'e' and back vowels 'o' and 'u' are in allophonic distribution but 5 graphemes were introduced to account for the exposure to European languages such as Spanish and English, from which there are many loanwords. Additionally, all of these languages when dealing with European loanwords will use the traditionally associated graphemes (such as 'c', 'x' or 'j') even though they do not exist in the vernacular alphabets. The modern Filipino alphabet was updated in 2014 by the Komisyon sa Wikang Filipino (Commission on the Filipino Language) to include all graphemes commonly used in writing European loanwords and many which are common in IP languages but not Tagalog, such as 'v'. The alphabet outlined above is the traditional 'Abakada' since that is what was being worked with during the workshop.

Proposed Bagobo Klata Orthography:

Phoneme	Proposed Grapheme
b	B b
k	K k
d	D d
g	G g
h	H h
l	L l
m	M m
n	N n
ŋ	NG ng
p	P p
r	R r
s	S s
t	T t
w	W w
j	Y y
word initial/medial ?	not written
word final ?	‘ (apostrophe)
ɐ	A a
ɛ	E e
i	I i
ɔ	O o
u	U u

Additional spelling rules are proposed as follows (for consensus reasoning, refer to Appendix 3):

1. Long vowels word finally [V:#] to be written as the vowel grapheme followed by an 'h'  
e.g. [ləwɛ:] written as <laweh> and [ʔumu:] written as <umuh>.
2. Geminate consonants to be written as two identical graphemes directly adjacent with no intervening symbols e.g. [pɔl:ɔs] written as <pollos>.

## CHAPTER 8

### Questions for Further Research

- Stress and prosody is a huge area we've barely touched upon.
- More elicitation to track ghost segments and check for underlying CCV syllable initially.

## Appendix 1

### Phoneme Feature Chart

	stops						fric		nasals			liq		gld			a	e	i	o	u	
	p	b	t	d	k	g	ʔ	s	h	m	n	ŋ	l	r	j	w						
syllabic																		+	+	+	+	+
consonant	+	+	+	+	+	+		+		+	+	+	+	+				-	-	-	-	-
sonorant										+	+	+	+	+	+	+		+	+	+	+	+
anterior	+	+	+	+				+		+	+		+	+								
coronal			+	+				+		+		+	+	+	-							
back					+	+						+			+		/				+	+
high					+	+						+			+	+				+	+	
low																		+				
nasal										+	+	+										
voice	+		+		+					+	+	+	+	+	+	+						
continuant								+	+				+	+	+	+						
round															+						+	+
strident								+														
lateral													+									

## Appendix 2

### List of Attendees

List of attendees -

Orthography Workshop Phase 1: 15-17/05/13 and Phase 2 8-9th June 2013

Name	District	Role
Cesar “Datu Aggu V” Betil	Tamayong	Tribal Elder
Datu Rosalino A. Anog	Sirib	Tribal Chieftain
Ptr. Edgardo P. Gabao	Calinan	Tribal Elder
Alma I. Tacon	Baguio	Teacher
Alfonsa A. Lanzo	Sirib	Teacher
Gina M. Samson	Cawayan	Teacher
Elvira S. Booc	Wines	Teacher
Alfie Roy O. Agman	Marilog	Teacher
Jessie Bugcal	Cadalian	Community Resource Person

## Appendix 3

### Orthography Problem Areas and Decisions

The following is a summary of the problem areas identified and discussed at the Participatory Orthography Development Workshop and the agreed solutions which were subsequently written into the draft spelling guide.

Problem: 2 vowels separated by glottal stop

Options	Advantages	Disadvantages
eheh	-	confusing (could be pronounced e-Heh) redundant symbol takes a long time to write
eeh	if first and second sounds are different, they should be spelled differently	will be read as two different sounds
ee	1 sound = 1symbol simple and easy to learn ease of transfer to Filipino	-
e-e	adds emphasis	takes long time to write makes break too obvious could be confused for doubled word

Decision: 2 vowels separated by glottal stop should be written directly next to each other without any symbol between them e.g. lai, pao, blee.

Reasons: It is simple. The hyphen will be used for doubled words.

Problem: Long vowels at the end of words

Options	Advantages	Disadvantages
laweh	easy to read and reproduce	-
laweeh	-	will be read with a glottal stop between vowels confusing to read don't need an extra symbol

Decision: A long vowel at the end of a word should be written as the vowel + h e.g. awah, umuh, mameh.

Reasons: Will not be confused with vowel-glottal-vowel sequence. <h> already exists in the alphabet but isn't used at the end of words otherwise.

Problem: Short vowels at the end of words (vowel followed by glottal)

Options	Advantages	Disadvantages
hyphen (-)	easy to reproduce on phone/ computer	already used in doubled words makes you want to elongate the sound
apostrophe (')	easy to reproduce on phone/ computer ease of transfer to other Philippine languages	-

Decision: A short vowel/ vowel followed by glottal stop at the end of a word should be written as vowel + apostrophe e.g. tii', dela', salapi'.

Reasons: The symbol already exists on a keyboard. Using an unused letter character would be confusing when transferring to English. Hyphen is being used for double words.

Problem: Doubled (reduplicated) words

Options	Advantages	Disadvantages
oddow oddow	-	could be read as a typo (“day” written twice, not “daily”)
oddow- oddow	easy to identify as one word ease of transfer to Filipino	can’t use hyphen to mean stop between vowels

Decision: Use a hyphen to link doubled words.

Reasons: Will reduce confusion. Hyphen can also be used for compound words.

Problem: Long consonants in the middle of a word

Options	Advantages	Disadvantages
oddow	easy to read no extra symbols	-
od’dow		doesn’t look good difficult to read
od-dow	adds emphasis	doesn’t look good difficult to read

Decision: Long consonants are spelled with two identical letters directly next to each other with no intervening symbols e.g. bulli, manneh, ottow.

Reasons: It doesn’t look good if written with a symbol. These symbols are being used to mean other things.

Problem: abbreviations

Options	Advantages	Disadvantages
mali'ng	ease of transfer to English	doesn't look good apostrophe already used
<b>maling</b>	ease of transfer to Filipino	-

Decision: Abbreviations will be compressed into one word e.g. mali ngo -> mali + ng -> maling; lewo keng -> lewo + k -> lewok.

Reasons: It is easier to read. There are no existing words "maling", "lewok" etc with a different meaning so people will not be confused. Apostrophe is used to mean glottal stop.

## Appendix 4

### Sample Texts

The following texts were given at the DepEd Orthography Workshop in May 2013 and were included in the draft spelling guide.

## Nago' ngo pamilya

By: Jessie A. Bugcal

Hago' ho Jessie Bugcal. Appat-pullu' wolu keng idad ku. Paha unno-pawwo u ngo angnga' neng omo ku. Appat ni ngo ho lepos. Eng koluwwu bonnotoy. Ho pullu' pittu' keng idad niya nengo bonnotoy. Uwwu ni ngo libu. Uwwu passik keng lai bonnotoy kengo hotu. Kinna ro ippod neng paha gira-pawwo nammo lai. Hago' ammo keng anda' ippod. Bonoddow u dinni to Kadaliya. Ko minum ko neng tubig nammo, kodolea ko agad det po kotikka neng ollong mu.

Omo ku kengo unno ngo boggali' ngo datu neng Kadaliya ole' datu nengo nammong distritu neng Baguio. Hiya keng unno ngo togangnga' ngo Bagobo Klata ponniskwila neng byangnga' niya dinni to Kadaliya, ngo bollinga ro passik neng be togangnga' kloni ta nammo ngo lugah. Mali' kengo toppeed niya nago' ole' neng be lepos ku, istriktu hiya to nago'. Noma?

Tonoy niya ngo kopongngo u giskwila ngo indi' ma hiya kopongngo giskwila ngo angnga' po hiya neng bonnotoy keng togangnga' niya. Eng kotuwa ngo kobboloy ku nomung be lepos ku, utang ku to niya impo ngo indi' monaow neng agad immo. Ole' to Pongnguo ku payang salamat ngo bollaya mu hago' neng omo o togangnga' ngo mali' keng addat ole' pogawang neng hutangkomo neng byangnga' niya, maha ku keng omo ku agad kela indi' ku komuta.

## Eng toggangnga<sup>1</sup> ngo hotawang

By: Datu Rosalino A. Anog, Elvira S. Booc, Alfonza A. Lanzo, Gina M. Samson, and Alfie

Roy D. Agman

Kinna hotu ngo toggangnga' ngo kinna wolu ngo be byangnga'. Limo keng be lai ole' tollu keng be libu. Noddo' hila to baranggay neng Helib. Eng dita neng omo ho Eking, eng dita neng ino ho Uri. Eng be dita neng be byangnga' ngo lai hila Itong , Nardo, Itok, Nonoy ole' gira-pawwo ho Rini. Eng be dita neng byangnga' ngo be libu hila Edie, Edis ole' ho Etot.

Ating Sabado neng lommo, eng toggangnga' huritu to nobboh nila. Need hila neng lahat ngo impo iba' moyusah nila abo' mullo neng ommoy. Onning impo ngo moyusah: hanggot, kasidu, baliyang, dadu ole' karas. Need pagsik hila neng binni neng ommoy ole' peed passik hila neng klobbow iba pudadu.

Neng nakkah hila to lokkow, koli keng omo nila, "homung lahat ngo be lai, eng inang nomu mattas, ole' homu ngo byangnga' ngo be libu pobotipu nomu keng be nobbot ating pongngo ro mattas keng be lai."

Eng ippod pagsik niya ho Uri, bollaya pagsik niya neng inang. "Hikko Uri, hikko keng momeng neng tokkaa to."

Neng gammi' ro hila ninang kadahotu, giddu' neng lommo huritu to lottu koddow bowawaloy hilang lahat. Nunga keng ino nila, "balleng mo ro lahat dinni, maa to ro."

Neng hottipu ro hila kommaa duu to lamisa, koli keng omo nila, "kailanga ngo hottawang tong lahat iba mogahu' mopongo keng be inang to."

Noppo' keng be byangnga', "Ee, gele' keng koli mo ama." Bolalig keng omo ole' ino nila neng maling addat neng be byangnga' nila.

Neng pongngo ro kommaa hila, ninang do ole' hila. Madu keng omo nila ole' mullo keng be byangnga' neng ommoy. Neng bopongngo do keng inang nila koli keng omo ole' ino nila, "salamat nomung be byangnga' nammo."

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