Some Observations on the Sociophonetics of Kapampangan

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ABSTRACT

Kapampangan, one of Philippines' most spoken languages and like all languages, has its own distinct characteristics that make it unique from other languages. This paper endeavors to investigate whether the literature written, primarily by Del Corro [6, 7] and Gonzalez [10] about the phonetics of the language are accurate. These phonetic observations can contribute to how people can view or perceive the language sociophonetically. These sociophonetic features that were observed and provided include the vowel inventory of Kapampangan, the loss of the /h/ sound in Kapampangan variants, vowel lowering in final position, the true description of Del Corro's circumflexed a, glides, monophthongization and the occurrence of glottal stop. A preliminary study on Kapampangan intonation, intonation units and prosodic patterns were also discussed using the Tobi method. These were the identied features from past written literature that may be a basis to sociophonetically distinguish the language from other Philippine-type languages. With the use of modern acoustic technology, the Praat software, this paper will attempt to give light on this observations and will try to verify whether these observations are accurate or not and in the end, aims to contribute to the growing literature of the language.

General Term/s

Languages

Keywords

Kapampangan, schwa, sociophonetics

1. INTRODUCTION

Kapampangan is classified as Austronesian, Malayo-Polynesian, Philippine, Central Luzon, Pampangan. Its alternate names are Pampangan, Pampango and Pampangueno. It is spoken by about 1,900,000 speakers in Luzon, Pampanga, Tarlac, and Bataan according to the 1990 census [8]. The dialect variants of Kapampangan are spoken in San Fernando, Masantol, Arayat, Angeles, Magalang and Mabatang [6]. Of these, the San Fernando variant is used in this study.

This paper endeavors to give some observations on the sociophonetic features of Kapampangan. Sociophonetics refers to "the interface of sociolinguistic and phonetics, and specifically to the use of modern phonetic methods in the quantitative analysis of language variation and change" [2]. The features that were observed and identified are vowel space, vowels and their variants, length, monophthongization, glides, and the consonants: voiceless glottal fricative /h/ and glottal stop /ʔ/, and will be analyzed as to whether these features are unique to the language

and can be the telling factor to identify that specific language therefore, excluding other pieces of information of the speakers like gender, age, occupation, etc. A preliminary study on intonational units will also be discussed in the paper. These features together with the ones mentioned may help us or a speaker know that what he/she is hearing is the Kapampangan language – distinct from other Philippine languages. Not much was provided for the consonants for there are not much significant differences that were observed. Also, it will not include the relation of other sociological factors that may affect these phonetic features. It will only focus on the phonetic features that may or may not sociologically classify a speaker to belong to the particular language studied. The modern phonetic computer programs Praat and JPlot Formants are then used for the phonetic analysis of spontaneous speech from the data gathered.

This study can also be used to verify on whether the past literature about the language still holds true even with the use of modern methods such as scientific computer programs. This paper also calls to other researchers to further study Kapampangan with the use of computing systems. Since the data used is spontaneous speech, the paper can provide some inputs on studies in spoken language processing.

2. RELATED LITERATURE

Del Corro's two very influential works, the Kapampangan Lexicography [6] and Kapampangan Morphophonemics [7] are used primarily in this study. The Kapampangan orthography, vowel systems and some observations about the language's phonology were introduced on both works by the said author. The Kapampangan Lexicography dealt more on how to write and compile word entries on the language and any other language in general.

Kapampangan Morphophonemics lists the morphophological and morphophonemical processes involved and critical to the language. The case of hypercorrectness as the reason of the appearance of the segment /h/ was also tackled. Hypercorrectness is the phenomenon where learned Kapampangan speakers were able to pronounce the segment /h/ into /h/ possessing words in English or Tagalog instead of demonstrating the phonotactic feature of Kapampangan as an h-less language; except on borrowed terms to other languages.

In Pampangan: Outline of a Generative Semantic Description by Gonzalez, [10] another work that was very useful in the study - the length and its nuances in the language were tackled and explained. He postulated that accented vowel in open syllables are longer (in duration) compared to accented vowels in closed syllables. He also noted that there are other factors that may

influence the noticeability of length in a syllable in Kapampangan such as consonant positioning – fricatives can give a vowel a noticeable length other than its stress mark.

Although, when it comes to pitch and intonation of the language, Gonzalez calls for a more detailed and in depth study regarding this aspect of the language for as he said, Clardy [3] has made some mistakes and misassumptions regarding the language due to the non-existence of acoustic instruments back when her study was first conducted. Therefore, though he reiterated claims from Clardy, he calls for another study that will use modern acoustic technology to verify or nullify forewriters claim about the language.

3. METHODOLOGY

For this paper, the data used were from three Kapampangan native speakers. Recordings of their personal introductions, unforgettable experiences and some procedurals were used as the primary data. To compare and check whether the past literature written about Kapampangan is accurate or not, acoustic software called Praat was used. It is for the better analysis of the wavelengths, pitch, intensity, formant listings etc. of the recordings that were recorded by the informants which are very important in this study. Using Praat, four things were done to the recordings First is segmentation for every speech sound Then the identification of the syllables. Then using Tobi, the identification of the tone, and intonation pattern for each intonational unit. And the last is putting the hypothesized breaks of the intonational units. The past literature about the phonetics of Kapampangan, primarily the works of Del Corro and Gonzalez were then used for comparison of what they observed and if it still holds true at the present with the use of scientific software Praat which are widely used by linguists today.

Table 1. Description and Average F1 and F2 Values of Each Vowel

Vowels	Description	F1	F2
[a]	Low central	621	1571
[ɪ]	Mid high front	354	2604
[ɛ]	High high front	481	2324
[ɔ]	Mid high back	530	1139
[ʊ]	High high back	401	1016

Table 2. Summary of the observed sociophonetic features of Kapampangan

The Kapampangan vowel space appears to be slightly lower when compared to its American English vowel space counterpart.
Vowel lowering was verified to occur in Kapampangan native words but not in borrowed words.
The low variant of a̱ was found out to be a schwa ə and not a circumflex [ʌ].
Glottal stop was verified to not be phonemic on initial position.
Preliminary ToBi analysis of Kapampangan intonation

suggests that the "sing-song" branding is accurate.
Kapampangan has a varying H* L* !H H-L% or L-H% pattern.

4. RESULTS AND ANALYSIS

Some of the written literature about Kapampangan were verified and the researchers of this paper compared these to their own result and analysis using the software Praat. The following sections will demonstrate these.

4.1 Kapampangan Vowels

According to Del Corro [6, 7], Forman [8], Mirikitani [15, 16], Clardy [3] and other researchers of Kapampangan, the language has five vowels: /a, ɪ , ɛ, ɔ, ʊ/.

Below is the average formant listing of each vowel which served as the basis for the vowel space that follows.

Table 3. Average F1 and F2 Values of Each Vowel

Vowels	F1	F2
[a]	621	1571
[ɪ]	354	2604
[ɛ]	481	2324
[ɔ]	530	1139
[ʊ]	401	1016

4.1 Vowel Space

According to the researchers of Kapampangan, the language has five vowels: high high front /ɪ/, mid high front /ɛ/, low central /a/, mid high back /ɔ/ and high high back /ʊ/. A representation of all the vowel spaces is provided below to constitute the vowel map of Kapampangan.
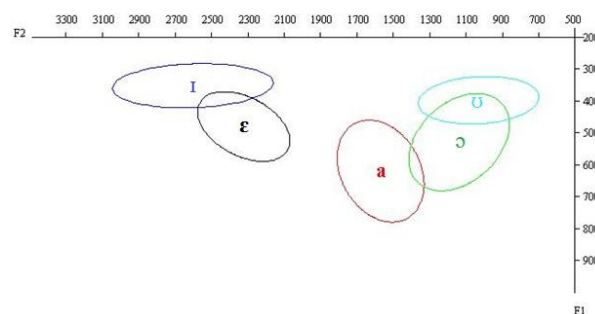

Figure 1. Kapampangan Vowel Map

From the vowel map we can see that vowels ɪ and ɛ slightly intersects with each another. The same can be observed with the vowels a̱, ɔ and ʊ̱. Also to compare it with the American English vowels frequencies, the vowel frequencies from the study of Peterson & Barney (1952) found in A Field Manual of Acoustic Phonetics by Joan Baart [1] was used.
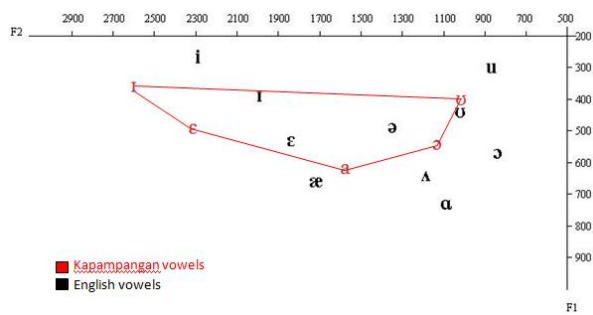
Figure 2. Kapampangan variety vs English

As seen in the image, it can be observed that the vowels do not strictly follow the tongue height and lowness and backness description that were previously written in past literature.

The Kapampangan vowel [a] that was represented above is indeed central but not as 'low' as the standard low central vowel when compared to the English vowel. It is almost in the middle hence the slight intersection with the vowel [ɔ]. The Kapampangan vowel [ε] is too fronted that it already has the same frontness as that of English [i]. The Kapampangan vowel [ɪ] follows its description high high front but like [ε] it is too fronted that it appears to be more fronted than the the English vowel [i]. The vowel [ɔ], although it is indeed in the middle, is also much more fronted than that of the English [ɔ]. The Kapampangan vowel [ʊ] although is higher than the English [ʊ] can still be said to follow its description as a high high back vowel.

Through the vowel map and the comparison with English vowels, it can be said that Kapampangan vowels are more fronted or is higher than that of their English counterparts.

4.2 Vowel Variants

Del Corro [6] said that in Kapampangan the vowels /i/ /a/, and /u/ have low variants. Particularly zooming into the low variants of the said Kapampangan vowels, it was said that these low variants /e/ for /i/, /^/ for /a/ and /o/ for /u/ occur on the final syllable of an utterance with a high pitch (in her work, high pitch is identified to be of numbers 2 and 3). By saying that, it is assumed that vowel alternation is conditioned by pitch in Kapampangan; with the variants being used with a higher pitch.

With that being said, the vowel variant of /a/ which is /^/ occurs in word final position and in closed syllable where the following consonant is any other than the glottal stop [6].

If that is so, then we take a look at some screenshots of the identified vowels to see if the phenomenon identified is the real deal within the language.
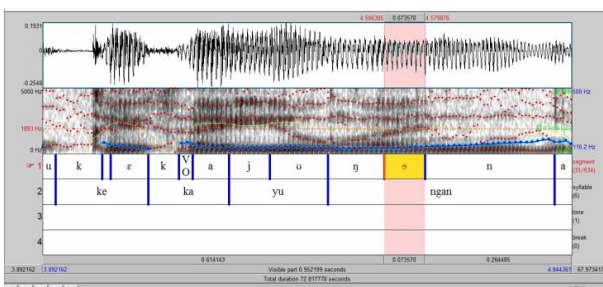

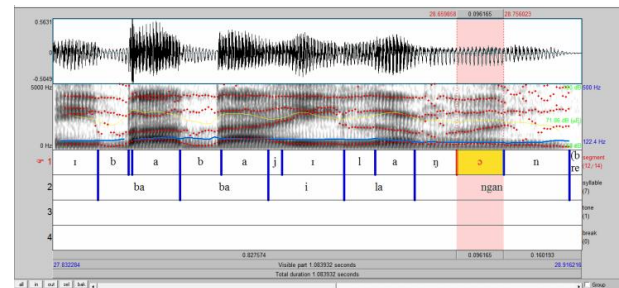**Fig. 3 Spectogram of the phrase "ke kayu ngan" (to all of you)**

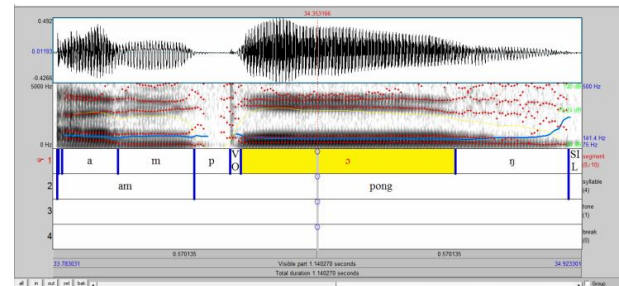**Fig. 4 Spectogram of the phrase "babai la ngan" (all of them are girls)**

Fig. 5 Spectogram of the word "ampong" (and)

Notice that in Fig 8 and Fig 9, the vowel /a/ positioned at the final syllable of the word /ngən/ is actually an /ə/ variant. This confirms that the lower variant of /a/ really occurs on the final syllable of an utterance, but a problem seems to arise, the pitch of the utterances above (Figs. 1 and 2) ends in a low pitch tone; which may violate or be a perverse of what was [6] said. The answer lies on the segment next to the /ə/ variant. Clearly, the segment next to the low variant of /a/ is a consonant other than the glottal stop. That is for the first two examples, it was the /n/ consonant. This phenomenon affirms Del Corro's observation that the lower variant of /a/ which is /ə/ occurs in the final syllable of an utterance with a consonant other than the glottal stop following it.

Now, Fig. 10 has a lower variant of /o/ in its usage (/ɔ/), as we can see, it is at the last syllable of the utterance (signified by the number 4 at the break tier). On this example, it is noticeable that the occurrence of this /ɔ/ has the pitch of the utterance on a high note. So, as of the moment, as our data show -- these low variant occurences are conditioned by the pitch of the utterance; specifically if the utterance ends on a high or rising pitch.

4.2.1 *[ʌ]*

Another very interesting vowel variant is that of the circumflex a [ʌ] as is termed by Del Corro [6]. According to her [6] the allophone [ʌ] of the phoneme /a/ occurs in word final position and in closed syllable where the consonant following is any consonant other than glottal stop. Below is a representation of these claims using Praat.

4.2.1.1 Word final position with high pitch

Based on the plotted formants of the allophone [ʌ], it is true that the sound of the phoneme /a/ becomes the low variant on the word final position with high pitch as what was stated [6].
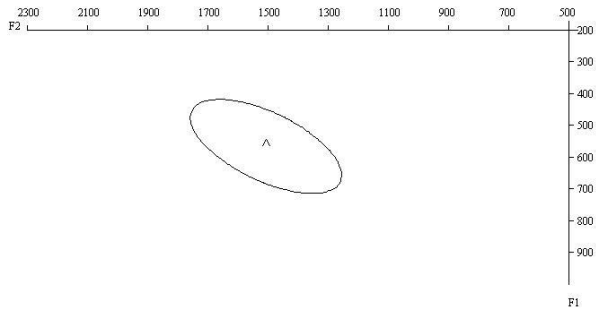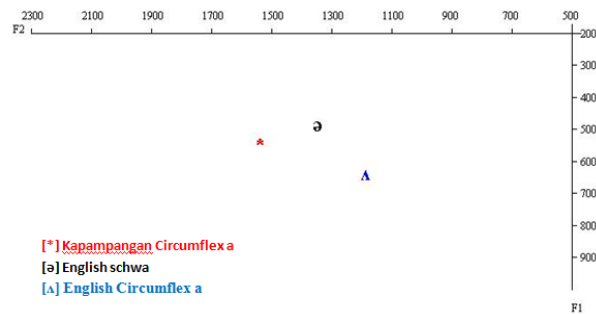

Figure 6. Word Final Position [ʌ]

However, its position when compared to the American English vowels study, [1] it appears to be closer to schwa [ə] than that of the English circumflex [ʌ]. Because of this observation, Del Corro's circumflex a will be represented as a schwa in the following images thereafter.

[*] Kapampangan Circumflex a
[ə] English schwa
[ʌ] English Circumflex a

Figure 7. Comparison of Kapampangan and English circumflex and schwa

Table 4. formants for figure 7.

ə		
[ʌ]		

4.2.1.2 Closed syllable where the consonant following is any other than the glottal stop.

The sound of the phoneme /a/ also becomes its low variant in a closed syllable where the consonant following is any consonant other than the glottal stop.
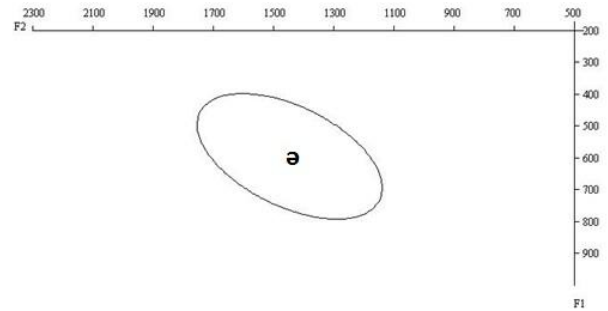

Figure 8. Closed syllable where the consonant following is any other than the glottal stop.

However, it was observed that when the word is a borrowed word (Tagalog, English) the high variant of the phoneme /a/ is used in a closed syllable where the consonant following is any other than the glottal stop.
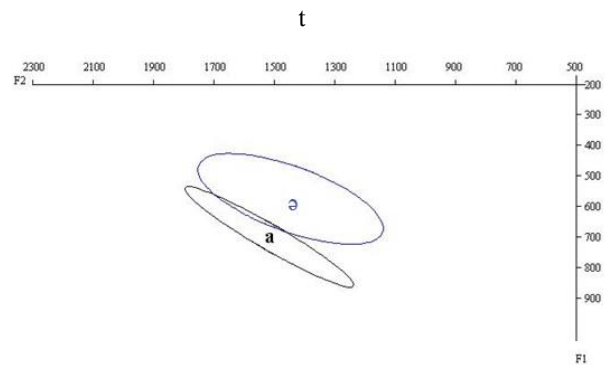

Figure 9. Comparison of schwa and [a] of borrowed words in a closed final syllable

4.2.1.3 Word final position with low pitch

The high variant [a] of the phoneme /a/ was also observed to occur in the word final position with low pitch as stated [6].
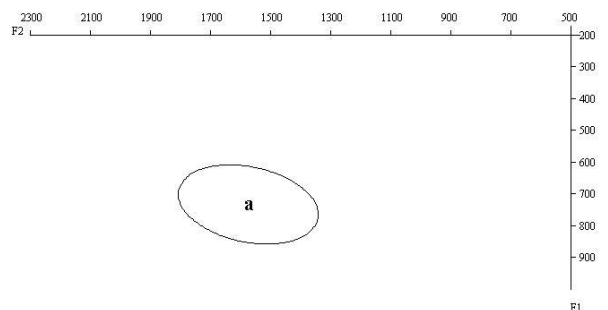

Figure 10. [a] in word final position with low pitch

4.3 Comparison with Tagalog and Ilokano vowels

Other vowel spaces are provided where Kapampangan vowels are compared to Ilokano and Tagalog. The data for Ilokano came from Corbillon [5] and for Tagalog from Peralta [17].
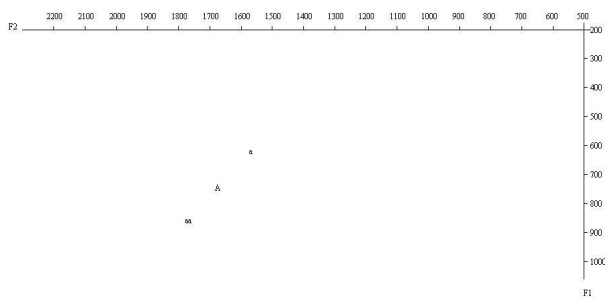
Figure 11. Plot of the comparison of formant values of the vowel /a/ in three languages: Kapampangan (Kap), Ilokano (Ilk) and Tagalog (Tag)

Where a = the Kapampangan /a/ ; aa = the Ilokano /a/ ; and A = the Tagalog /a/ (the same will apply to the other figures that will follow this section.)

In here the three /a/s of the three languages project a step-like ladder when plotted on the vowel map. The Kapampangan /a/ (a), is the highest among the three – meaning that the /a/ of Kapampangan islow but not as low as the Ilokano (aa) /a/ and the Tagalog /a/ (A). Ilokano's /a/ is actually the most open of the three /a/ s with the Kapampangan /a/ being the most closed /a/ among the three. Tagalog /a/ here seems to be the neutral /a/ among the three, situated just at the middle of the other's articulation points.
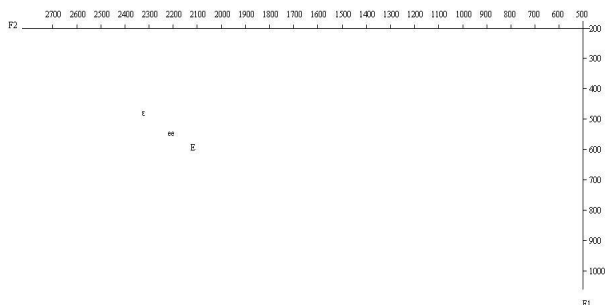

Figure 12. Plot of the comparison of the formant values of /ɛ/ in three languages: Kap, Ilk, Tag

As illustrated by the two figures above, the vowel / ɛ/ has a description of a mid – high front vowel, but may not be as fronted as /i/. When compared to the different / ɛ/ sounds of other Philippines languages like Ilokano and Tagalog; the Kapampangan vowel / ɛ/ seems to be the more fronted than the other two / ɛ/. Also, the Kapampangan / ɛ/ is the highest of the three sounds when articulated and the Tagalog / ɛ/ seems to being the lowest / ɛ/ .
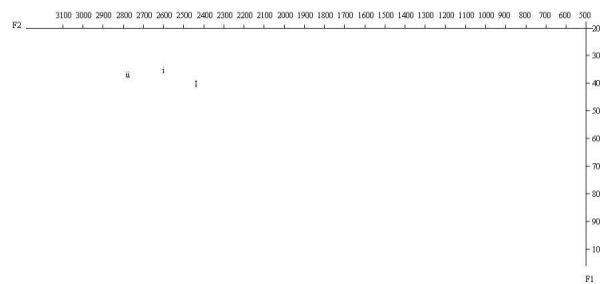

Figure 13. Plot of the comparison of the /ɪ/ formant values in three languages: Kap, Tag, Ilk

With regards to the vowel /i/, we could see here that among the three /i/ in the three languages we are comparing, Ilokano /i/ is more fronted than both Kapampangan and Tagalog. Though Kapampangan's /i/ seemed to be the highest of the three /i/s; while the Tagalog /i/, considering its frontness when articulated, is moe back than the other two.
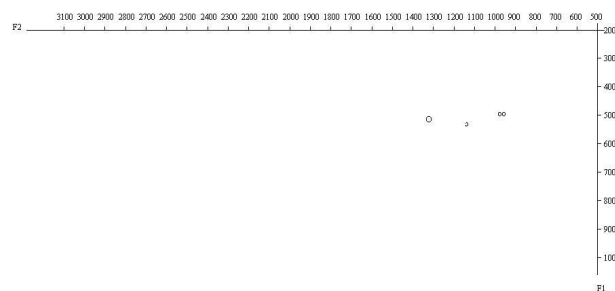

Figure 14. Plot of the Comparison of the Formant Values of /o/ in three languages: Kap, Tag and Ilk

The Kapampapngan /o/ was described to be mid-high back; and true enough, when compared with the /o/ from Tagalod and Ilokano and seems that they are at the same level when highness is talked about, but the Tagalog /o/, is more front than the Ilokano and Kapampangan /o/. While the Ilokano /o/ is the most backed /o/ among the three.
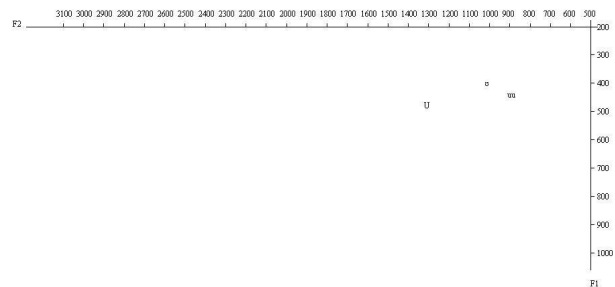

Figure 15. Plot of the comparison of formant values in three languages: Kap, Ilk, and Tag

In this illustration we would see that the Ilokano /u/ is the most back among the three vowels, and that the Tagalog one is more front than the other two vowels. Kapampangan /u/ on the other hand seems to be the highest in tongue height among the vowels,

but not significantly as high that an obvious inference can be made.

4.4 Voiceless Glottal Fricative /h/

According to Del Corro [6], /h/ is not phonemically distinct. /h/ and /f/ are used if the speaker is conscious and careful of his pronunciation and for borrowed words. Otherwise /p/ is used for /f/. /h/ is used by the minority and/or those with much exposure to h-language. It may be described as sophisticated or non-sophisticated. Non-sophisticated speakers may articulate a friction variant maintaining the same syllable boundary or a transition from one syllable to the next either with the use of the glide /y/ or /w/ or with neither but simply indicating a syllable boundary.

The term 'hypercorrectness' was also introduced as the reason for the appearance of the phoneme /h/ in Kapampangan speech. Hypercorrectness is the phenomenon where learned Kapampangan speakers were able to pronounce the sound of /h/ even if it is a phonotactic feature of Kapampangan to not originally have it in their consonant inventory as an h-less language. It is the proposed reason for the Kapampangan speakers' ability to pronounce it especially for words in English or Tagalog.

4.4.1 From the data the word 'meg-ayskul' (nag-hayskul in Tagalog) was observed to delete the /h/ and was pronounced as megayskul. The same syllable boundary as the original was not maintained and was pronounced as [me.gaj.skul].
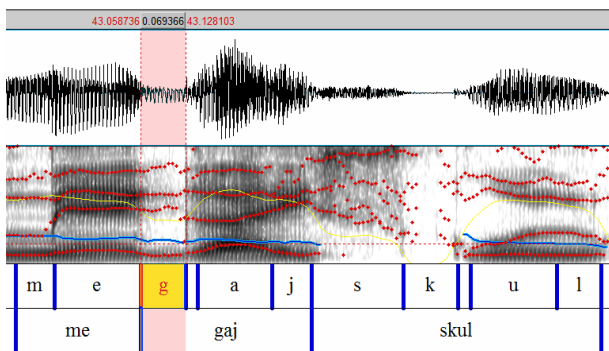

Figure 16. Spectrogram of the word megayskul (attended highschool)

4.4.2 Another example is the word 'Holy Spirit' which was pronounced as [woli spirit] in the recording. Here a transition from one syllable to the next with the use of the glide /w/ was observed to be used.
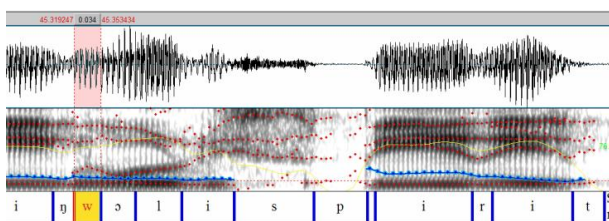

Figure 17. Spectrogram of the word woli spirit (Holy Spirit)

4.4.3 The last example is the word manguwa which was from the Tagalog word *mangkuha* (manguha- manguwa- mangwa). The /h/ was replaced by [w].
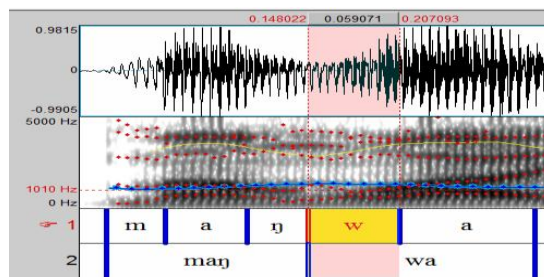

Figure 18. Spectrogram of the word mangwa (is getting)

4.5 Glottal Stop /ʔ/

Gonzalez [10] identifies the glottal stop in Kapampangan as distinctively functional in final position and that if it will be in the initial position, the glottal stop will be optional. Del Corro [6] adds that the glottal stop is not really phonemic in the language but appears only in final position in deliberate style – where the speaker can correct his/herself; while in spontaneous style, the glottal stop occurs only before a pause.

This will be another feature that distinguishes Kapampangan speakers from other speakers of Philippine languages. As such, we study some examples taken from the data.
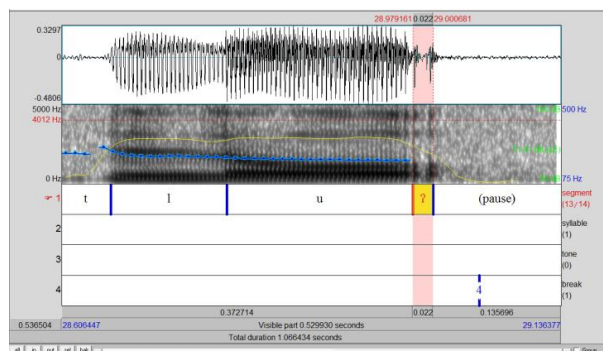

Figure 19. Spectogram of the word "pangatlu" (third)

Here is a zoomed-in screenshot of a word that was identified to have a glottal stop in the final position before a pause. Notice here that the highlighted part in the diagram where the glottal stop is. A technique to check is to look at the pitch (blue line) waves. If it suddenly cuts through and if you still see the sound waves to continue, then most probably you got a glottal stop.

In this third figure, originally, where the screenshot was taken, this only has a small pause between the word "pauli" and the next one. But, it has been identified still as a pause by the native speaker,that was why this screenshot was taken.

Based on what we saw on our data we confirm that what Del Corro [6] and Gonzalez [10] about the glottal stop is true. As with the use of Praat and the data we got from our informants confirms this claim -- that it occurs only in final position before a pause
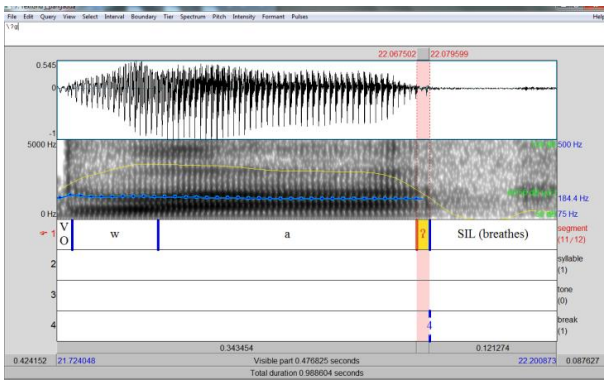
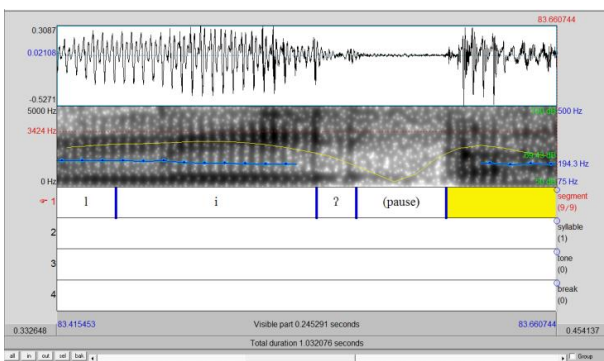**Fig. 20. Spectogram of the word "pangadua" (second)**

Fig. 21 Spectogram of the word "pauli" (about to go home)

In this third figure, originally, where the screenshot was taken, this only has a small pause between the word "pauli" and the next one. But, it has been identified still as a pause by the native speaker, that was why this screenshot was taken.

We can now posit that what Del Corro [6] and Gonzalez [10] said about the position of the glottal stop in Kapampangan might be true and present in the language; as the data we are now presenting here using modern acoustic technology, confirms the said phenomenon.

4.6 Monophthongization

Del Corro identifies monophthongization as something peculiar as part of the phonology of the language, She defines it as the regular change of dipthongs to /o,e,/ and /i/ respectively. Why the language did it? Probably because of economics and practicality, one might have an inovation so that it would be easier for the people to communicate. That is just one speculation and may need further studies. But how does a monophthong in Kapampangan looks like?

Kapampangan actually, has many borrowings from the Tagalog language, an example of this will be these two terms which underwent monophthongization. The word "pangane" may have come from the Tagalog word "panganay" (first-born) which has the same semantic meaning as the Kapampangan word. Also, the second word, "babo" may have been derived from the Tagalog word "babaw" (top). This phenomenon may have taken place during the adaptation phase of the language due to contact with Tagalog.

The highlighted parts were the monophthongized segments. The diphthongs, when they shifted into the language shifted into its lower variants.
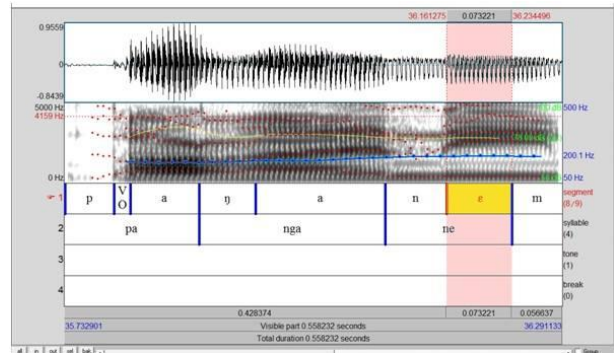
Fig. 22 Spectogram of the word "pangane" (first-born child)
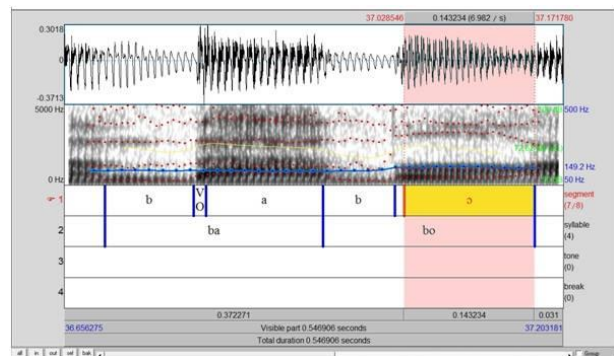
Fig.23 Spectogram of the word "babo" (top)

Kapampangan actually, has many borrowings from the Tagalog language, an example of this will be these two terms which underwent monophthongization. The word "pangane" may have come from the Tagalog word "panganay" (first-born) which has the same semantic meaning as the Kapampangan word. Also, the second word, "babo" may have been derived from the Tagalog word "babaw" (top). This phenomenon may have taken place during the adaptation phase of the language due to contact with Tagalog.

The highlighted parts were the monophthongized segments. The diphthongs, when they shifted into the language shifted into its lower variants.

4.7 Glides

According to Del Corro [6] [aw] and [ay] is the phonetic representation of /ao/ and /ai/ respectively. Gonzalez [10] also points out that like the Tagalog language, since Kapampangan do not insert the glottal stop consonant in-between vowels, Kapampangan inserts glides between two successive vowels; with the most common glide being y. Therefore, VV, VCV and VCVC formatives, are identified by Gonzalez to be common in Kapampangan.

4.7.1 The Glide [aw]

As seen in the example below for the glide [aw], the word [ku.bao] Cubao is observed to follow this. By using PRAAT, the formant listing of that specific sound was gotten and was plotted

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to know the area where it lies. From that we can say that it was in the area of the /o/ vowel which was similar with the proposed vowel space of Kapampangan in this paper.
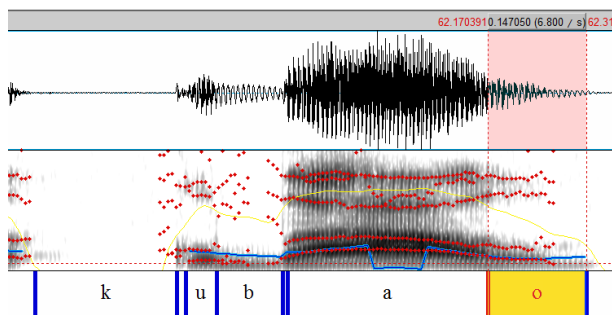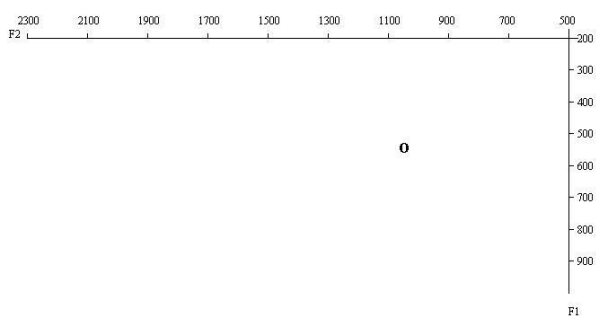

Figure 24. Spectrogram of the word kubao (Cubao)

Figure 25. Vowel space of the o in kubao (F1: 543, F2:1050)

4.7.2 The Glide [ay]

 For the example for the glide [ay], the word [ba.bai] babay (woman) is observed to also follow what was written. Using the same procedure as for the glide [aw], we can say that it was in the area of the /i/ vowel which is similar with the proposed vowel space of Kapampangan in this paper.
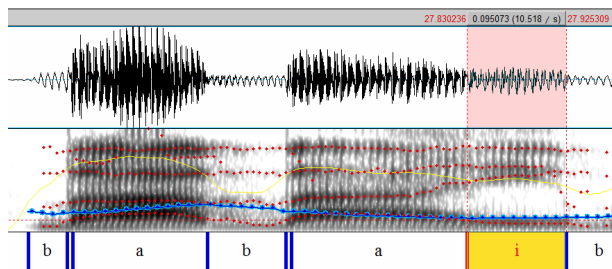

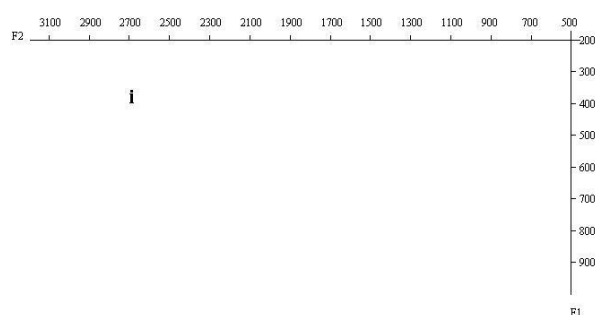**Figure 26. Spectrogram of the word babai (woman)**

Figure 27. Vowel space of the i in babai (F1: 382, F2: 2690)

4.8 Intonation

According to Himmelman [12] the segmentation of spoken discourse is really challenging. No particular linguist has arrived at the best/a good mechanism to segment spoken discourse higher than words in a given language. If someone produces a transcript or anything related to that segmentation according to Himmelmann [12], the process in which the linguist/scholar arrived at such notions and methods still remains a history even today.

Identifying an intonational unit in a spoken discourse is not an easy task, but Himmelmann [12] listed some of the basic cues for identifying one. These are the stops, breathing gaps, pause in between units and prolongation of the final segment are some of the ways in which one can distinguish a new unit from another – this actually roots from changes in pitch and rhythm.

In this section, what will be presented is a preliminary analysis or identification of intonation units or idea units in a Philippine language, specifically Kapampangan. Since the related literature found on this topic were mostly in English or about Western languages, there will now be an attempt to relate this topic to one of our own languages to see whether assumptions and observations on languages previously studied under this topic would yield similar results when applied to a Philippine language, or if would it turn out very differently than previous studies in other languages or better yet, if the framework and methods used to study the previously studied languages on this topic does not fit the Philippine languages in general.

Table 5. Table of Intonation Units with columns for their pauses, gaps and constituents from a Kapampangan sound file (Tee Introduction soundfile)

INTONATION UNIT	PAUSE/SILENCE (in msecs)	FULL CLAUSE	SEMI-CLAUSE	NP	OTHERS	NO. OF IDEAS PER IU
	.237				X	
			X			
			X			
			X			

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	Dur	Full	Semi	NP	Others	Ideas
	[orange]				X	
	.442		X			
	.324			X		
	.319				X	
	.432		X			
	.406		X			1
	.129			X		
	.430			X		
	.216				X	
	.563				X	
	[orange]				X	
	[orange]		X			1
	.572			X		
	1.085		X			
	[orange]		X			
	.495	X				2
	.594	X				1
	[orange]	X				1
	.207	X				1
	.209				X	
	[orange]				X	
	.357	X				1
	.084				X	
	.255		X			
	.314			X		
	.325		X			
	[orange]		X			
	.960		X			
	1.098				X	
	.165				X	
	.077				X	
	.078				X	
	.662	X				2
	.551	X				1
	.547		X			
	.296	X				1
	.693		X			
	.356	X				1
	.600		X			
	.722	X				1
	.496				X	
	1.046				X	
					X	
TOTAL:		1O	16	5	16	

This table presents the preliminary findings and observations in the Kapampangan data under the subject of intonation units. Right now, the intonation units listed above are the ones taken from the Kapampangan self-introduction by the author.

From that sound file, forty-seven intonational units were identified. These numbers include all the full clauses, semi clauses and other intonational units classified under "Others". By classifying them into others, what I meant is that they may be one of the following: ligatures, exclamations, negators and affirmators, etc.)

This particular sound file has most of its intonational units as semi-clauses, with 21 in total (this includes the NPs). While only 10 of those intonational units were full clauses and 16 of the total intonational units were classified under "others"/ Most of them are hedges and connectors used either to start a particular topic or that introduces another idea in the narrative.

Speaking of the number of ideas in an intonational unit we also tried to see if what has been suggested by Chafe as discussed in Himmelman [12] is true, that there is only a single idea that is suggested or given by a single intonation unit (also known as one-new-idea-at-a-time-hypothesis). Intonation units that are semi-clauses that do not really make sense – by "makes sense" what is meant is that somehow it generates a picture in one's mind on the arguments of the utterance. Some of the intonational units identified were particles or linkers that were why those intonation units were excluded from the idea count. So far, most of them do have an idea within them, and there were two instances where there were two ideas introduced at the same intonation unit

4.8.1 ToBi and beyond
This part identifies a particular prosodic pattern then labeling it.
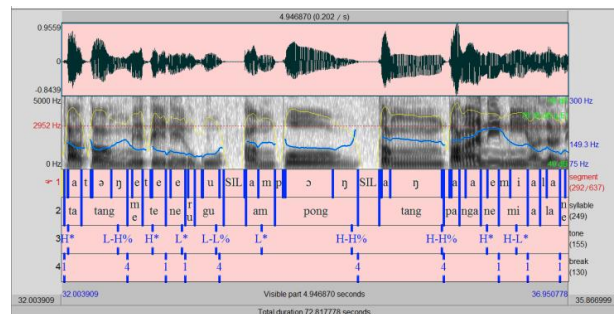

Figure 28. Screenshot of a sample of a four-tiered spectrogram using ToBi method of identifying intonational units and prosodic patterns

With Kapampangan, every syllable and word in an intonation unit in this language needs to be considered. Unlike other segmented files from other Philippine languages that were observed, the pitch changes varies much in this language. It is not possible to focus just on the end part of the intonation unit or in the middle or at the beginning and try to see their behavior because so many changes and pitch fluctuations happen on the whole intonation unit as seen on this screen capture taken from the data.

Now for a particular prosodic pattern as what my data shows and my prosodic judgment says Kapampangan preliminarily might have this prosodic pattern on its intonation units:

H* !H L* L-H%

L* L* H-L%

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The occurrence of a downstep might be a little bit suspicious here but then we labeled some downsteps on our notations based on how we heard the intonation units when it was uttered on the sound file. For now, based on what we heard, the downstep for us is not really that visible and visually discernible. For us, we assigned the downstep as a sort of a secondary stress or a rise in pitch that is not seemingly so high for it to be classified s a high pitched tone. Of course, following the manual, we think the downstep really appears somewhere in the middle of an intonation unit and will never start an intonation unit.
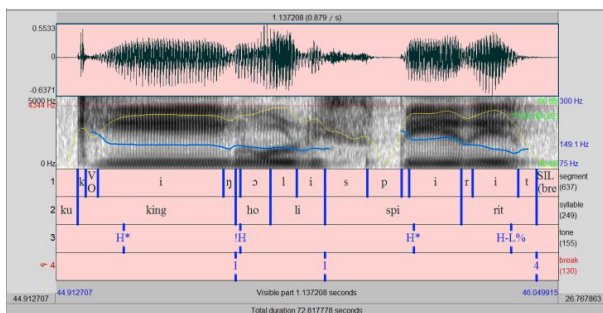

Figure 29. Screenshot of an intonation unit with an observed general prosodic pattern in Kapampangan

This screenshot has the general prosodic pattern that was mentioned above. It stated with an H* tone around the first word of the intonation. We would like to take note that the pitch markers are not that reliable in identifying where the labelling should be placed; that is why on the data, the labeling may not be parallel to the tone that it may represent. Most of the time the researchers have to use their own auditory judgment to determine the point where we put the labels for the tone tier.

Notice here that a downstep notation follows the H* notation. As what has been said awhile ago, its presence may bring suspicions on the table but then we based the existence of downsteps in our notation on the seemingly secondary high pitch, but lower than what we consider as a high pitch, on the intonation units. Interestingly, we found what the manual said as consistent that downsteps do not start an intonation unit but found somewhere in the middle of an intonation unit as what is shown by the screen shot.
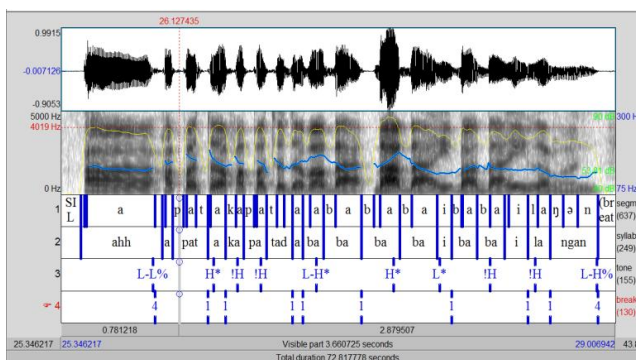

Figure 30. Screenshot of the longest intonation unit found in the sound file

This screenshot shows one of the longest intonation unit identified on the sound file. If the labeling is correct, this intonation unit is a combination of H* and L* with downsteps in between. If similar

trends will be identified on the other sound files that will be annotated with ToBi in the future, then perhaps the long-resounding stereotype of Kapampangan as having a "sing-song" accent may have a little bit of credibility because of alternation of high and low pitch accents accompanied by a consistent L-H% ending.

The number of labels found on this screenshot may increase suspicions on the way it is labelled, but then again, we based it on how we heard it, as it was uttered plus a cross-validation on the pitch marker. If our judgment and the pitch markers does not jive with what they imply, we followed our own perception for as what the manual says, when in doubt, one's own auditory judgment is a lot more helpful.

5. SUMMARY

Through the use of the software program Praat and Jplot Formants, the written literature about Kapampangan phonetics were verified if it is indeed accurate. The researchers' own observations were also provided based on the results and analysis from the data.

The vowel map that was represented in this study appears to be much more fronted or higher than that of the American English vowels. Also, Del Corro's vowel lowering in the final position was verified to be accurate but does not hold true in borrowed words. The vowels in the final position of borrowed words retain their original sound. The low variant [ʌ] of the phoneme /a/ is claimed to be a schwa [ə] by the researchers as was the result of plotting its formants then comparing it to the American English vowels.
The consonants: voiceless glottal fricative /h/ and glottal stop /ʔ/, were also analyzed using Praat. The [h] is not a phonotactic feature of the language and based on the given examples above it is not spoken even if the word is a borrowed word. This may be because the data used for this study is that of spontaneous style. The claims of Del Corro and Gonzalez about the [ʔ] are verified to be accurate. It is phonemic only in the final position in deliberate style – where the speaker can correct his/herself; while in spontaneous style, the glottal stop occurs only before a pause.

The monophthongization that happens in Kapampangan was also looked into using Praat. It is said that the diphthongs, when they shifted into the language shifted into its lower variants hence the monophthongization. Not much was discussed about it, but the representation of how its spectrogram looks like was provided above. The glides [aw] and [ay] is also verified to be the phonetic representation of /ao/ and /ai/ respectively.

And lastly, the intonation, intonational units and prosodic patterns of Kapampangan were examined. It has been posited that the "sing-song" intonation being branded to the language is of good credit because in the preliminary findings of intonation patters, Kapampangan has a varying H* L* !H H-L% or L-H% pattern. Although it was recommended that a further study be made by future researchers on this topic since it is one of the pioneer studied of ToBi software in Philippine languages.

As this paper only provided some observations on the sociophonetic features of Kapampangan using Praat it cannot entirely be used as the basis to really identify Kapampangan language from all the other languages. Further studies are needed for this to be able to do so.

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