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# PROSODIC F EATURES IN BANGKA MALAY LANGUAGE, SUNGAILIAT DIALECT: A STUDY ON ACOUSTIC PHONETICS

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**Abstract**

The Bangka Malay language, which is a Malay-Polynesian language family, has dialect variations with heterogeneous sub-dialects within it, and one of them is Sungailiat dialect. The purpose of this study is to focus on documenting prosodic features of Sungailiat dialect as one of the dialects in Bangka Malay language. This research is a qualitative research with research stages applying phonetic experiments using a practical phonetic and phonology approaches developed by Collins and Mess (2019). Prosodic features include speech intensity, duration, and intonation. Data collection was carried out through a process of observation, interview, and recording of respondents who are native speakers of the Sungailiat dialect. The data were processed by using voice analyzer software Praat version 6.3.03 to obtain accurate measurements of intensity, duration, and intonation. The results of the analysis show some variations in lexical entries, particularly from the elder informants. Intensity is marked by the oscillation of intensity contours and the frequency densities since the speech flows in co-articulation effect. That means that the adjacent vowels or consonants interchange to form the speech dynamics. Speech intonation in Sungailiat dialect is identical with accentuations of initial syllable, particularly when addressing someone. Imperative mood is prone to be in offering form rather than in command. In speech duration, elder informants are likely to show the whole prosodic variables particularly, as in the flow of their speech in higher pace, and more accented points in intonation contours. Interference of culture in daily communications is believed to shape Sungailiat dialect as it is shown in the prosodic analysis. On the other hand, the more distinctive speech spoken by older informants implies a shift in the intensity of the use of Bangka Malay by the younger generation in both lexical and prosodic features.

**Keywords:** ***acoustic phonetics, dialect, Bangka Malay, prosody***

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***Abstrak***

Bahasa Melayu Bangka yang merupakan rumpun bahasa Melayu-Polinesia mempunyai variasi dialek dengan subdialek yang heterogen di dalamnya, salah satunya adalah dialek Sungailiat. Tujuan dari penelitian ini adalah untuk mendokumentasikan fitur-fitur prosodik dialek Sungailiat sebagai salah satu dialek dalam bahasa Melayu Bangka. Penelitian ini merupakan penelitian kualitatif dengan tahapan penelitian menerapkan eksperimen fonetik dengan menggunakan pendekatan fonetik dan fonologi praktis yang dikembangkan oleh Collins dan Mess (2019). Fitur-fitur prosodik meliputi intensitas ucapan, durasi, dan intonasi. Pengumpulan data dilakukan melalui proses observasi, wawancara, dan pencatatan terhadap responden penutur asli dialek Sungailiat. Data diolah dengan menggunakan perangkat lunak penganalisis suara Praat versi 6.3.03 untuk memperoleh pengukuran intensitas, durasi, dan intonasi yang akurat. Hasil analisis menunjukkan adanya variasi entri leksikal, khususnya dari informan yang lebih tua. Intensitas ditandai dengan fluktuasi kontur intensitas dan kerapatan frekuensi sebagai dampak tuturan yang mengalir dalam efek ko-artikulasi. Hal ini menunjukkan vokal atau konsonan yang berdekatan saling bertukar dan membentuk dinamika wicara. Intonasi tuturan dalam dialek Sungailiat identik dengan aksentuasi di awal suku kata, khususnya pada saat menyapa seseorang. Struktur kalimat imperatif cenderung berbentuk penawaran, bukan perintah. Dalam durasi tuturan, informan yang lebih tua cenderung menunjukkan keseluruhan variabel prosodik secara khusus, seperti alur tutur dengan tempo yang lebih tinggi, dan titik aksen yang lebih banyak pada kontur intonasi. Intervensi budaya dalam komunikasi sehari-hari diyakini membentuk dialek Sungailiat sebagaimana terlihat dalam analisis prosodik. Di satu sisi, perbedaan tuturan yang lebih khas oleh informan berusia tua mengimplikasikan pergeseran intensitas penggunaan bahasa Melayu Bangka oleh generasi yang lebih muda baik dalam unsur leksikal maupun prosodi.

**Kata Kunci:** ***dialek, fonetik akustik, Melayu Bangka, prosodi***

## A. INTRODUCTION

A language is known based on the characteristics it has as a marker that differentiates it from other languages. Every language in the world is distinguished by linguistic elements, in which each element, despite having high complexity, can be explained and measured logically and scientifically. Statistical data released by the Ministry of Education and Culture of the Republic of Indonesia states that in 2019 Indonesia has 718 regional languages with various dialects and sub-dialects spread across all provinces. Along with the progress of the process of modernization and digitization, as well as the mobilization of people from one region to another, the existence of regional languages is faced with

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conditions of increasing pressure to maintain their existence, where the number of speakers is increasingly mingling with the national language, other regional languages that penetrate into the local language, as well as international languages which are increasingly being taught in educational institutions. It is not surprising that several scientific articles that examine local languages found that several regional languages or dialects are in a condition where there are few speakers and this leads to the threat of extinction of dialect in that language. Local languages in their development seem to be neglected by the new generation of regional language-speaking heirs because of the assumption that local language reflects its ancientness and considered outdated (Emawati, 2022). Documentation that records the existence of a language or dialect is an effort to preserve the local language as the identity of a region. Comprehensive documentation of a language is absolutely necessary with the aim of identifying language elements, both in terms of phonetics, phonology, morphology, syntax, semantics, and pragmatics.

In general, a language is identified from the utterances spoken by speakers of native languages in daily communication. An area is also known through the language used, which means that language is the identity of a region. An interesting thing in this study was initiated by the existence of various speech variations in a dialect in the Bangka Regency area, especially in the Sungailiat sub-district. This research was conducted to document the elements of spoken language contained in the Bangka Malay dialect of Sungailiat spoken by people who live in Sungailiat, Bangka Regency, Bangka Belitung Islands Province, Indonesia. This also deals with sociolinguistics study that covers language variations, including the classification of dialect itself, as regional dialects, social dialects, and genderlects (Fromkin, Rodman, & Hyams, 2018). Dialects cover variations in grammar and vocabulary, and together with pronunciation, they reflect the language variety (Collins and Mess, 2019).

Sungailiat is one of eight sub-regencies in Bangka Regency, the province of Bangka-Belitung Islands, Indonesia. The languages used in the daily communication include Indonesian and Malay languages.

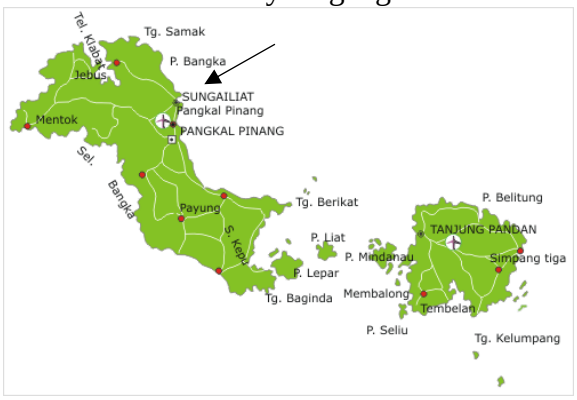


***Fig 1*:** The map of Bangka –Belitung Islands

Bangka Island, which is world-wide known for the biggest tin mining, is dominated by Malay and Chinese people and some other ethnic groups, including, Javanese, Sunda, Bugis, Batak, and Flores. It consists of four regencies including Bangka Regency centered in Sungailiat, West Bangka Regency centered in Muntok, Central Bangka Regency centered in Koba, and South Bangka Regency centered in Toboali. The capital city of the province is located in Pangkalpinang.

Each of the regency is characterized by distinguished dialects or sub-dialects. The latest research on Bangka Malay language divided this language into five dialects: Pangkalpinang, Sungailiat, Toboali, Mentok dan Belinyu dialects (Saputra & Afifulloh, 2020). This was gained based on the division of administrative regions in Bangka Island and by the same time, the substances of dialect (lexis, grammar, and pronunciation) can be distinguished from one dialect to the others. Earlier research on dialectology in

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Bangka Malay stated that Sungailiat dialect covered Kapuk, Neknang, Tiang Tara, Bukit Layang, Dalil, Bakam, Nangka, Mabat, Penyamun, Cit, Kenanga, dan Air Duren (Silahidin, Saleh, & Burhan, 1991). This also stated that Bangka Malay consisted of five dialects, including Mentok, Belinyu, Toboali, Sungailiat, and Pangkalpinang dialects. Extensive research on language varieties of Bangka Malay language was recently held in order to compile the dictionary of Bangka Malay language in 2018 and mapped Bangka Malay language into five dialects including Ranggi Asam dialect, Tua Tunu dialect, Jeriji dialect, Tempilang dialect, and Mayang dialect (Khaliffitriansyah et.al, 2018). However, considering the linguistic diversities found in this region, it is considered important to recommend a regional dialect map for the sake of further research.

Prosodic features of a language are considered to be able to represent the characteristics of spoken language of Bangka Malay as well as to elucidate the phonological conditions in speech in order to delineate this dialect as a system. This is encouraged by the speech features which not only comprise the segmental elements but also display the speech manners of people within a region. As varieties in utterances occur significantly in Bangka Region, segmental analysis is considered not to be sufficient in distinguishing the peculiarity of speech among dialects or sub-dialects in this region. In performing the analysis in phonetics and phonology studies, phonemes (consisting of vowels and consonants) become the major focus to be investigated. However, when the study deals with utterances in the form of phrases or clauses where phonemes cannot be segmented, the prosodic analysis takes role in investigation. Therefore suprasegmental or prosodic features cover the syllable, a complete word, phrase, whole sentence, and even more (Collins and Mess, 2019). Previous studies showed that social status, gender, geographical factor, dialect, and other aspects may influence the prosodic features in a language. The analysis of pitch, intensity and speech rate in speech emotion recognition was applied for bilingual speakers by performing linear support vector machine in analysis to detect the four basic emotions of anger, fear, happiness and sadness (Abdel-Hamid, Shaker, & Emara, 2020). Prosodic analysis covers a wide range of detecting functions as it involves physical examinations of human speech. In producing speech, organ of articulations work accordingly to the cognitive capability of human's brain. Physical and mental conditions also contribute to the result of prosodic analysis. The cases of autism, dementia, and also graysexuality became the subject of analysis by performing the prosodic features (Coombs Fine, 2019).

On the other hand, devices that support voice analysis are considered important in order to gain accurate analysis statistically as the physics of sounds become the subject of measurement. One model of prosodic analysis was performed in Batak Toba language, where the frequencies, intensities, and speech durations were measured and analyzed by using Praat voice analyzer, distinguishing male and female speakers (Kuswantari, Atusaadah, Syarfina, & Sitinjak, 2022). The typical analysis commonly covers the speech modes in measuring the intonations and intensities, while vowel qualities are possible to be measured by only performing utterances in words or phrase, since Praat software is able to segment the utterances in seconds or even in millisecond. One model of analysis was shown in Indonesian language considering the assimilation of Java and Madura tribes (Pandhalungan), performing the coding, annotating speech, conversion of acoustical components, and significance test (Rois, 2022). The purpose of the present research is

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to figure out the characteristics of spoken language of Sungailiat dialect based on the prosodic features so that it would be distinguished from other dialects of Bangka Malay.

## B.METHOD

This study uses a qualitative research method by applying phonetic experiments, where later the results of data processing are documented and conveyed explicitly in a narrative structure. Experimental phonetics is a branch of linguistics that contributes to the development of semantic elements of word class parts through measuring the physical parameters of speech sounds (JHA, 2021).

The data used for this research consisted of four clauses (in the form of affirmative, negative, interrogative, and imperative moods) and one hundred words taken from Swadesh list (Swadesh, 2017) which is used globally as the basis of vocabulary in historical-comparative linguistics concept. The data would be used by the native speaker of Bangka Malay in recording process. For sampling purpose, this research applied purposive sampling method by selecting ten natives speakers (male and female), range from twenty up to fifty years old, born and domiciled in District of Sungailiat, Bangka Regency. The ten informants were spread across the villages in the sub-district so that the data obtained from each informant could be cross-corrected for validity. This is in line with the method of selecting samples from areas of observation that are quite large in area by paying attention to the criteria that must be met to become an informant (Mahsun, 2017). Recording was situated in a soundproof room in order to avoid noise, and microphone was connected to Dolby On© version 1.8.2 software for high quality recordings. The recorded data would pass imaging process by a voice analyzer Praat version 6.3.03 to identify the pitch, length, and intensity of speech accurately. Text grid is given to identify the speech (phoneme, syllable, words, and clause). For the need of the research in suprasegmental analysis, the three main suprasegmental features were analyzed thoroughly, including intensity, pitch/ intonation, and the length of speech. One sample is displayed below as the result from Praat voice analyzer.

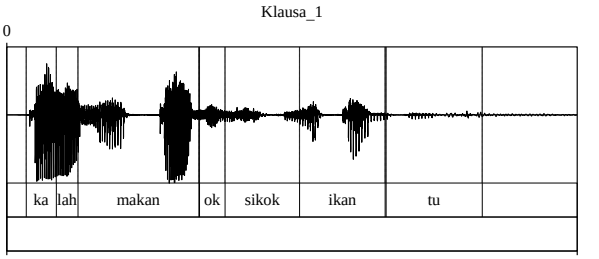


***Fig. 2.*** Display of sound and text grid in declarative clause

Accuracy in analysis became crucial that each feature would identify if there were distinct utterances from speakers within Sungailiat dialect, or if there were possibilities of sub-dialect existed within the dialect.

## C. FINDINGS AND DISCUSSIONS

### *Findings*

Based on the recordings of lexical entries from Swadesh list, it was found that Sungailiat dialect has 35 phonemes consisting of 11 vowels (/a/, /ɑ/, /ɒ/, /e/, /ə/, /ɜ/, /i/, /ɪ/, /o/, /u/, /ʊ/), 18 consonants (/b/, /c/, /d/, /g/, /h/, /ʤ/, /k/, /ʔ/, /l/, /m/, /n/, /ŋ/, /ɲ/, /p/, /r/, /s/, /t/, /w/), and 6 diphthongs (/ai/, /au/, /ia/, /iɜ/, /ue/, /ui/). This was gained after transcribing the recordings from each informant. There were several differences in lexis found among informants, mainly between younger and older informants, as shown in the following table.

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**Table 1:** variety in uttering words in Sungailiat dialect

| No | word | Bangka Malay | |
|---|---|---|---|
| 1 | small | Kecik [kəcɪk] | kecit [kəcɪt] |
| 2 | tree | pohon [pohon] | batang [bɑtɑŋ] |
| 3 | burn (verb) | ngebakar [ŋəbɑkɑr] | nunu [nunu:] |
| 4 | all | semuin [səmuin] | semuen [səmuen] |
| 5 | white | putih [putih] | puteh [putɜh] |
| 6 | red | merah [merah] | mirah [mirah] |
| 7 | see | liet [liɜ:t] | ningok [niŋok] |
| 8 | bite | gigit [gigɪt] | ngigit [ŋigɪt] |

The variety in utterances mainly deals with pronunciation varieties; however, the words *tree* and *burn* differ the lexis used by elder informants who still use native words as well as descended pronunciation.

In order to perform the prosodic features of Sungailiat dialect, four clauses in different grammatical moods are performed and compared among the informants.

**a. Speech Intensities**

The first feature to analyze would show the speech intensities in various moods uttered by the informants. In declarative clause, the informants stated the sentence "*You ate that fish.*" in Bangka Malay as: "*Ka lah makan sikok ikan tu.*" Range of intensity is shown in the following table distinguishing male and female speakers.

**Table 2.** Intensity ranges in declarative clause

| Intensity Ranges | | |
|---|---|---|
| Min. Intensity (male) | Max. intensity (male) | Mean (male) |
| 37.40 dB - 51.16 dB | 83.92 dB - 84.42 dB | 75.66 dB 77.35 dB |
| Min. Intensity (Female) | Max. intensity (Female) | Mean (Female) |
| 27.74 dB - 48.63 dB | 84.32 dB - 87.84 dB | 75.75 dB - 78.29 dB |

The declarative clause was gained after adapting the utterances from the informants since some of them stated the clause in different structures as: (1) *Ka lah makan ok sikok ikan tu.* (2) *Ka lah makan ikan sikok tu.* (3) *Ka lah sude makan sikok ikan tu.* (4) *Ka sude makan sikok ikan tu.* The structures tend to be idiosyncratic since the informants are not directed to be pragmatic. However, this would be the arena of lexicogrammar to be analyzed. The intensity ranges indicated that both male and female speakers of the dialect have certain patterns in speech where the fluctuation of intensity, later on, can be compared with the frequency in speech. The following charts compare the intensity contours of male and female speakers.

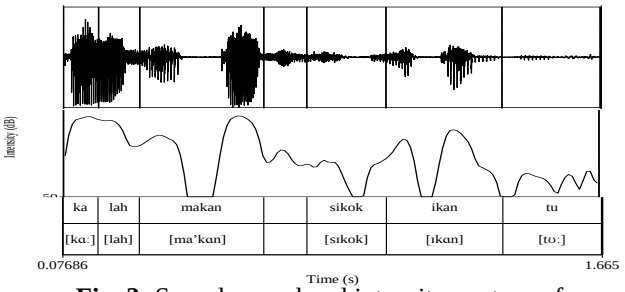


**Fig. 3:** Speech sound and intensity contour of declarative clause by male speaker

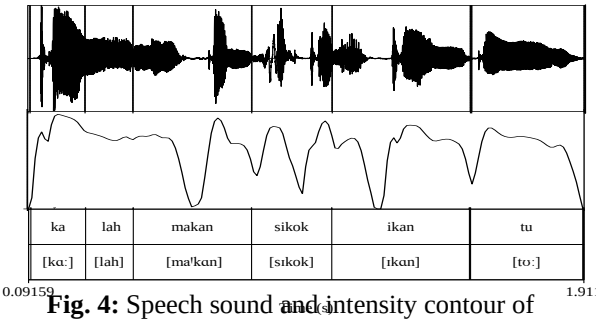


**Fig. 4:** Speech sound and intensity contour of declarative clause by female speaker

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Praat showed that both speakers initiated the speech in higher frequency referring to the phrase "*ka lah*" (you have), with the mean energy intensity is 80.80 dB. Nearly all speech in declarative clause addressed the interlocutor "*ka*" (you) in similar degrees of intensity. The verb *makan* (eaten) tends to be higher in the second syllable (81.43 dB) and this occurs in most final syllable initiated by voiceless stop consonants (*ma-kan, si-kok, i-kan*) indicated by the gaps between the syllables where the intensity drops. However, female speakers of Sungailiat dialect tend to be more stable in uttering a statement compared with the male speakers who mostly end the clause in lower frequency and intensity. This would lead to the assumption that idiolect takes role within the dialect since male and female speakers' speeches are commonly perceived in such way.

In negative declarative sentence, the clause 'You did not eat that fish' is spoken as '*Ka dak makan sikok ikan tu*.' Some variations of the clause are spoken as '*Ka dak makan ok sikok ikan tu.*', and '*Ka dak makan ikan sikok tu.*' The use of particle '*ok*' [o?] in the variations is commonly tagged in declarative clauses of Sungailiat dialect speech to confirm certain conditions, similarly to the question tag form in English grammar. Intensity contours of the negative sentence are shown in the following images.

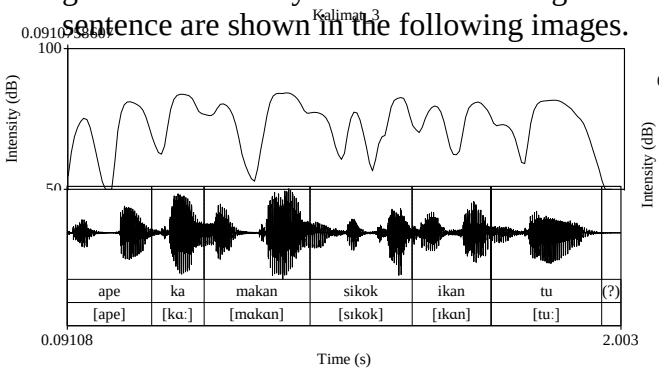


**Fig 5:** Intensity and speech sound of negative declarative clause by male speaker

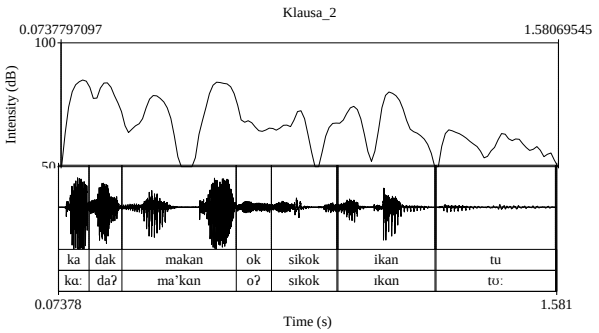


**Fig 6:** Intensity and speech sound of negative declarative clause by female speaker

The negative marker is shown in the word '*dak*' (not) with glottalized /k/ transcribed as [daʔ]. Intensity contours are quite identical among speakers despite the inverted noun phrases of '*sikok ikan*' and '*ikan sikok*'. Average value of intensity by male speaker is 75.35 dB and by female speaker is 76.09 dB, which shows similar result from the declarative clauses where the female speakers tend to speak in higher intensity than the male speakers.

In interrogative mood, the clause '*Did you eat that fish?*' is realized in various ways as follows: (1) *ka lah makan lom sikok ikan tu?*; (2) *Ka makan ok ikan sikok tu?*; (3) *Ape ka dak makan sikok ikan tu?*; (4) *Ape ka makan sikok ikan tu?*, with the majority utterance used is the fourth clause. The intensity contours and speech sounds are shown in the following images.

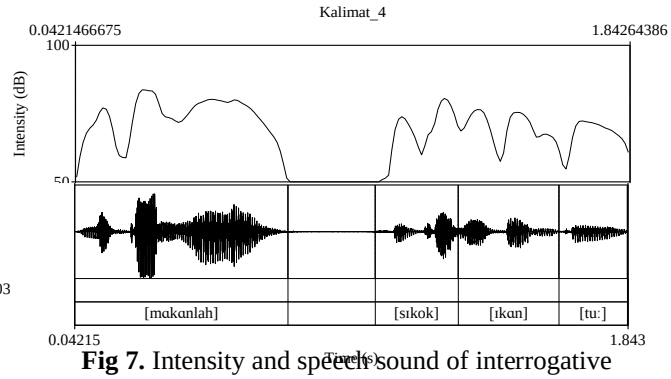


**Fig 7.** Intensity and speech sound of interrogative clause by male speaker

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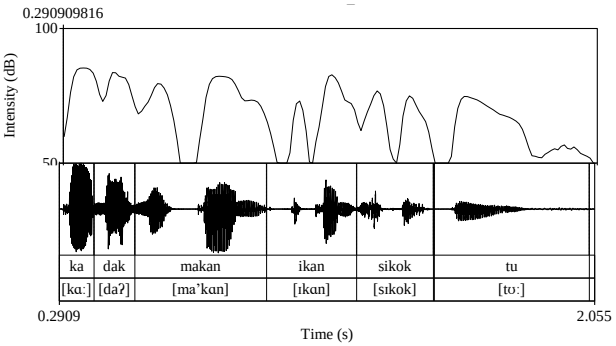


**Fig 8.** Intensity and speech sound of interrogative clause by female speaker

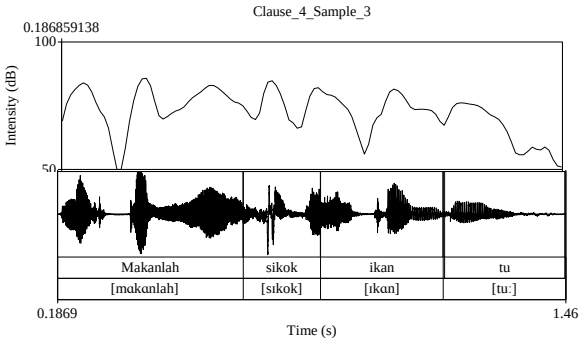


**Fig 10.** Intensity and speech sound of imperative clause by female speaker

The mean-energy intensity spoken by the male speaker shows the average value of 77.79 dB with the peak of intensity in the second syllable of the verb '*makan*' (eat), while the female speaker utterance shows the average value of intensity is 76.02 dB with the maximum intensity in the pronoun '*ka*' (you). The patterns shown by the frequency of speech sound somehow give a cue that word stresses are represented differently when words are set in interrogative clause, where primary stress takes position in the second syllable, or final syllable. This analysis should refer to the pitch analysis later on, in which the proportion in contours is comparable with the intensity.

The imperative clause 'Eat that fish.' is stated dominantly as '*Makanlah sikok ikan tu!*' and two informants uttered in different way as '*Makanlah ikan tu sikok!'*. Both are acceptable and understood among the Sungailiat native speakers despite the difference in structure.

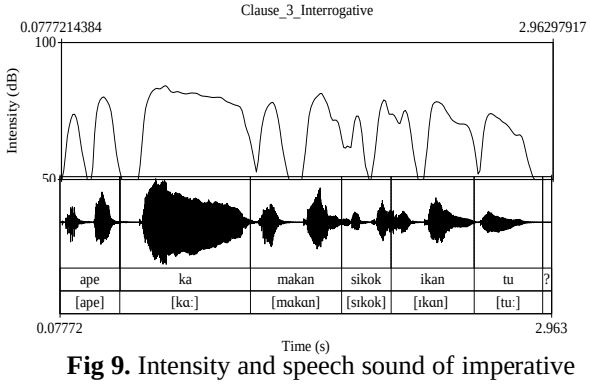


**Fig 9.** Intensity and speech sound of imperative clause by male speaker

Based on the measurement on Praat, the average value of intensity of the male speaker is 74.48 dB and that of the female speaker is 77.59 dB. The imperative marker used by the speaker is the suffix /laːh/ in the final syllable within the imperative verb. The attention now is directed to this syllable which tends to be expressed in the form of offering rather than commanding as shown in the intensity contour, but this needs to be clarified after observing the intonation feature.

**b. Analysis on Intonation**

Intonation is regarded indispensable in any speech analysis since this feature characterizes the speech dynamics in the dialect and by the same time gives information about how the moods are realized in speech. However, the analysis would not show the illocutionary functions since the aim of this research is to identify the prosodic features and leave the pragmatic matters aside, such as speaker's attitude and intention. Since the utterances have been performed in the previous analysis, including the speech sounds in the form of speech frequencies, then the intensity contours will be the main concern to display. It is also possible to view the linguistic significance based on the analysis of this feature.

Intonations are shown in Praat by activating the pitch menu, accordingly to the point that the varying intentions are indicated by the change in pitch levels (Raju, Kalathinathan, & Vally, 2022). Therefore,

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the dynamic of stress contribute to the structure of pitch and is realized as intonation. The pitch contours of the declarative clause '*Ka lah makan sikok ikan tu*' ('*You have eaten that fish.'*) are drawn in the figure below, taken from the first informant.

Praat is able to measure the pitch frequencies in detail and by the same time the mean pitch. The clause in Fig. 10 visually displays how the clause is uttered, begins from the pronoun [kɑ:] (you) which rises slightly starting from 148.93 Hz up to 155.58 Hz. The word [lah] is less dynamic with slight-rising in pitch. In pronouncing [ma'kɑn], the first syllable [ma:] falls from 128.76 Hz to 98.70 Hz, followed by plosive consonant /k/ in the second syllable, that is the peak of pitch shown by the rising frequency of 168.21 Hz to 228.00 Hz, thus the verb "*makan*" shows falling-rising pitch. The noun phrase '*sikok ikan tu'* tend to be in level pitch (rather flat) ranging from 82.34 Hz to 132.35 Hz. The particle "ok" [ŏ?] is quite distinguished in this dialect, since it is found in all types of mood, and seems to be a habit in speech. The curvy contour of the sound [ŏ?] is identical in this dialect since it is spoken spontaneously and, in this declarative clause, functions to confirm a situation. Similarly to negative declarative, the particle [ŏ?] is also found but in the state of high-falling (333.52Hz to 186.73 Hz). However, a few speakers did not use this particle mainly because they focused on the language transfer without being given any context of situations.

Another typical intonation contours were found in interrogative clause, marked by fluctuating patterns of pitch. The intonation contours of interrogative clause are shown in the following figures.

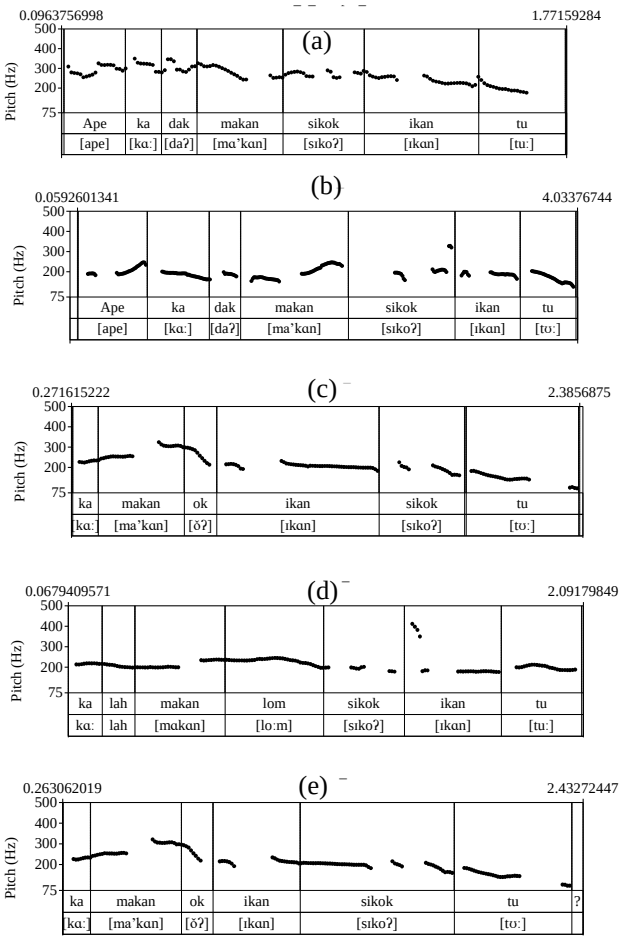


**Fig 12.** Pitch contours of the interrogative clauses, spoken by female speakers

Based on the five clauses in Fig. 11, interrogative mood in Sungailiat dialect is marked by falling intonation in the end of the clauses, which is in contrast to the general perception on interrogative clauses where rising intonation takes place in the final part of the clause. The gradual movements of falling intonations take place in several parts of the clauses. The rhythms in speech seem to have certain pattern where the rise and fall of intonation have been constructed in interrogative clause. In clause 11 (a) and (b), the question begins with the interrogative marker /ape/ (as auxiliary verb), while the other clauses begins with the subject pronoun [kɑ:] and this build distinction among the clauses. The pitch variations in clause 11(a) and (b) showed low-falling

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intonation in the first three words [ape kɑ: da?] and shifted the manner of speech to be more attitudinal without being directed or controlled during the recording process. The shifting in sentence construction was found in the clause '*Did you eat that fish?*' which was interpreted as '*didn't you eat that fish?*' because both speakers would use the most convenient way in speaking as what they commonly use in daily communication. Bangka Malay speakers found that it was awkward to use "*Ape ka makan sikok ikan tu?*' in asking whether he ate that fish, because it is considered as an accusation to the interlocutor, compared with "*Ape ka dak makan sikok ikan tu?*' which is considered neutral in the context of like or dislike. Intonation contour in 11(c) is marked by the peak of pitch in the verb [mɑ'kɑn] (eat), where the second syllable [kɑn] reaches 330.24 Hz. In the full display of Praat, the pitch contour of 11(c) interrogative utterance can be viewed in the following figure.

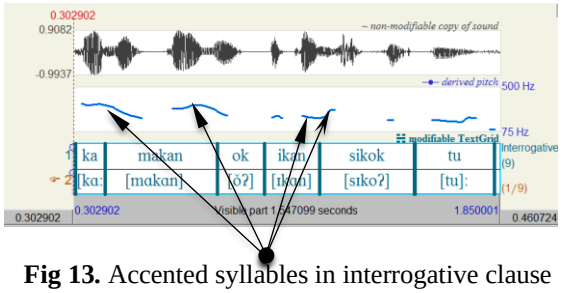


**Fig 13.** Accented syllables in interrogative clause marked by the arrows

One point to consider is that co-articulation in connected speech occurs that no syllables are in isolation. The straight lines in the speech frequency point out plosive phonemes, followed by dense frequencies which are identical with stressed syllables (marked by the arrows in Fig. 12). The most identical process found here is the nasalization and glotallization of adjacent vowels as in nasalized /o/ in [ɔ̃ʔ] which gets influence from the nasal /n/ in final syllable ['kɑn]. In order to view the nasalized vowel, spectrogram is displayed in the following figure.

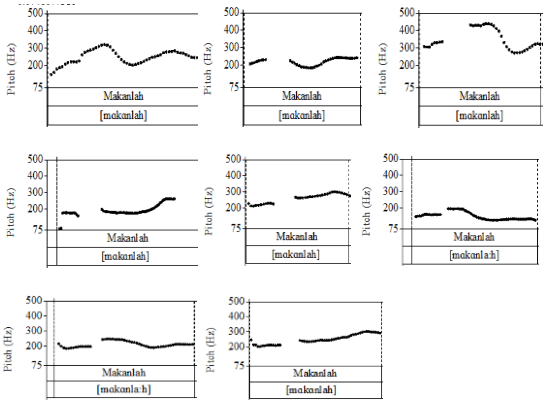


**Fig. 14:** Nasalized [õ] is shown in the horizontal circle, taking position in F1 (first formant)

The first formant of the spectrogram indicates the prolonged nasal sound that affects the vowel /o/, marked by the horizontal circle, indicating that the tongue tip moves a bit lower than the alveolar position. The vertical circle marks the gap between the syllables. The connected speech continues to the glottal stop sound in which the particle /ok/ is pronounced as [õ?]. The typical use of this particle has been the identity of most speakers of Bangka Malay, primarily in declarative clauses (to confirm a statement or to convince a particular condition) and interrogative clauses (to encourage the listener in replying a question and clarify a situation instead of giving accusation).

Imperative clause is initiated by process in the clause '*Eat that fish*!' spoken in Sungailiat dialect as '*Makanlah sikok ikan tu*!' Pitch variations are prominent in command verb '*makanlah*' (eat), marked by dynamic oscillation of frequency. The intonation is perceived as rise – fall – rise pattern with the degrees of pitch frequencies vary from one speaker to the others. Gender seems not to be significant in speech production since male or female speakers have the same pattern in common. However, the pitch contours in final part of the imperative clauses tend to be low-rise, with some variations which tend to be in level

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pitch. The following figures perform the pitch variations of the command verb from eight speakers.

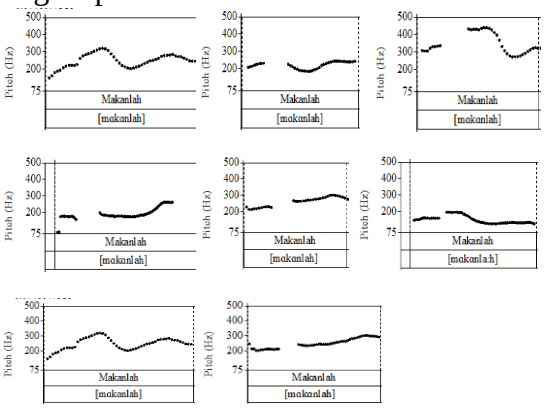
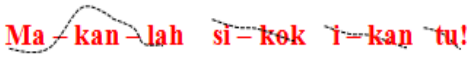



**Fig. 15**: Pitch contours of the command verb '*makanlah*'

Variations in pitch contours above are marked by the various levels of pitch frequencies, started in the range of 149 Hz (speaker 6) up to 310,1 Hz (speaker 3), expressing command in the form of offering rather than ordering. The higher the pitch in initiating the command, the more considerate the speech is perceived since speaker's attitude toward the context of speech shows interest in response to the interlocutor. Nominal word '*sikok*' (one) constantly show low-rise – fall pattern, except when it takes position in final position of the imperative clause, which shows fall – rise pattern. The stressed syllables are in accordance to the pitch movements and dominantly end in falling pitch. One of the imperative clauses is described as follow:




Since the utterance is in the form of spontaneous and connected speech, then what is perceived here might be considered contextually, for instance if another clause comes after it, or when a context is given to the speaker that generates the speech.

**c. Analysis on Duration**

Speech duration produced by native speakers of Sungailiat dialect varies personally and can be classified based on the speaker's gender. Each utterance from clauses discussed previously has variations when measured as unit of syllable, word, phrase, or in complete sentence. In declarative clause, the average duration of male speakers takes 1.46 up to 1.84 seconds to complete the whole utterance consisting of ten syllables in connected speech, while female speakers take 1.77 up to 2.64 seconds. However, certain syllables are uttered particularly with deceleration and by the same time mark the stress point of syllables. In uttering the verb '*makan*' where the stress occurs in the second syllable, the duration takes longer than other syllables within the clause.

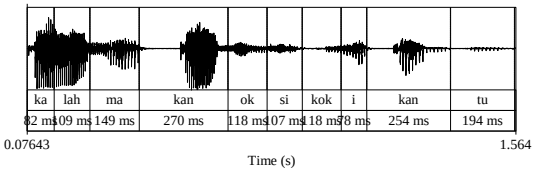



**Fig. 16:** Duration per syllable in declarative clause by male speaker.

The two syllables [kɑn] are marked by the blockage of air before initiating the plosive /k/ and by the same time giving stress points to both words '*ma-kan*' (eat) and '*i-kan*' (fish). However, some female speakers articulated the clause with the sentence stress falls on the determiner 'tu' (that), hence turn the duration longer in final part of the clause.

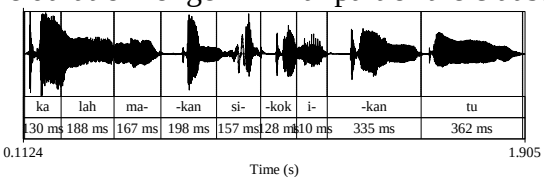



**Fig. 17:** Duration per syllable in declarative clause by female speaker.

From the figure above, the stressed syllable /kɑn/ in 'i-kan' (fish) and the determiner 'tu' (that) in the end of clause are significantly longer, that brings the notion that this female speaker gave her intention to the object of the sentence as noun phrase '*ikan tu*' (that fish). Each speaker's intention would distort the stress position and by the same time the speech duration.

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In interrogative clause, speech rate of male speakers ranges from 1.38 up to 1.81 seconds, while duration in female speakers' speeches range from 1.55 up to 2.09 seconds, consisting of ten syllables. Acceleration of speech is found from the adverb '*lah*' (indicating that an action happened or has happened) and the action verb '*makan*' (ate) triggered by a set of vowel /ɑ/ coming in sequence.

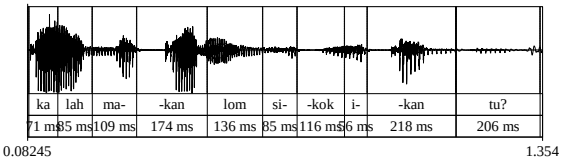


**Fig. 18:** Duration per syllable in interrogative clause by male speaker.

Continuous speech, or commonly termed as connected speech involves co-articulation process that turns the acoustic signal of phoneme /ɑ/ vary in frequencies, including the duration of the vowel. The changes of length can be compared between the condition when the syllable is in isolation (approximately 125 ms) and when it is in a clause as in the figure above (71 ms).

In imperative clause, the speech duration made by male speakers ranges from 1.21 up to 1.77 seconds, and by female speakers range from 1,15 up to 2.49 seconds, consisting of eight syllables. Each utterance is marked by deceleration during the demonstrative '*tu*' (that). The properties of vowels are also considered since they are the nucleus of syllables (yet they do not influence the meaning as in tone language). Legato in intonation prolongs the duration of the speech sound, while in the other part of the clause, density of frequencies mark the connected speech that flows continuously.

In regard to the duration analysis, it was found that the informant's origin (home village) and age contribute to the variation in speech duration. In some cases, the informants who come from remote village of the district spoke more spontaneously and rapidly, hence take shorter duration in speech, on the other hand, those (younger informants) that spend more time near from the main city, speak in normal pace, if not slower, with less accentuation during the speech.

***Discussion***

Dialects in Bangka Malay language are characterized by the linguistic variables, in which this research focuses on the paralinguistic aspects of Sungailiat dialect. The analysis displays the prosodic features contained in Bangka Malay, specifically on Sungailiat dialect. This research is a fundamental research to understand the form of oral speech of one of the Bangka Malay dialects from a phonetic perspective so that new insights into the Malay language family can continue to be updated. Prosodic features include the three variables of suprasegmental features: intensity, intonation, and duration of speech. Analysis on intensity showed that content words were dominantly higher in intensity level. This is in accordance with the speech stress detection (Czap & Pinter, 2015) by observing the accented syllables, recognizing that intensity is influenced by the following three factors: (1) fundamental frequency rises on the stressed syllables (pitch accent); (2) higher articulation intensity of the stressed syllable (dynamic accent); (3) duration of the vowel of stressed syllable is lengthening (quantitative accent). These factors refer to the fact that primary stress is typically reserved for the content words, whereas function words are rarely accented.

Peaks of intensity commonly mark the beginning of clauses, which is the subject of the clause /kɑ/. Apart from the imperative mood, all clauses dominantly begin with the subject pronoun /kɑ/. From gender perception, female speakers had higher intensity ranges compared with male speakers. However, elder speakers tend to

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utter the subject in longer duration that turn the intensity in lower rate than the younger speakers.

Speech duration covers a complete clause with the detail of each syllable by splitting the utterances and considering the stressed syllable to have longer durations. Co-articulation process takes role in measuring the speech duration where the vowels have more contribution in length than the consonants do.

There are at least two causes of systematic vowel duration variation: stylistic (due to speaking rate variation) and phonological (due to vowel length distinctions) (Mok, 2011). In the case of Sungailiat dialect, both are accepted to give influence on speech duration, since speech rate varies in age and gender of the speakers. However, some vowels are uttered differently in length (as in /i/ and /ɪ/) and when the vowels are in the co-articulated environment. In stylistic aspect, the speech duration in imperative mood comes up with deceleration when addressing the interlocutor, to express more polite command instead of expressing order.

Intonation might refer to several aspects of markers within a language or dialect, including the sentence mood markers (Petrone & Niebhur, 2014) as it is found in Indonesian language (Sugiyono, 2007). Intonation can be perceived as the most noticeable marker for those who are not the native speaker of this dialect as it is naturally shaped during the language acquisition process, or at least perceived after a long transition process of language for non-native speakers.

## D. CONCLUSION

Sungailiat dialect becomes an identity that distinguishes the native from the other dialects in the province of Bangka Belitung Islands. Sungailiat dialect is identical in the lexical entries and the way the native speakers utter the clauses in various moods as shown in the prosodic analysis, covering the speech intensity, duration, and intonation. The elder speakers are distinguished in the prosodic features, including in speech rate and intensity compared with the younger (twenties) speakers due to their broader interactions. Intensity ranges of male and female speakers have both in common, mainly in the way the speech of an utterance is spoken in co-articulation that triggers higher intensities in the final syllables of a word or phrase. Higher intensity levels were mainly taken place in plosive consonants, as in addressing the interlocutor with pronoun. Imperative clause is likely to express offering than commanding, marked by gradual reduction of intensities in the suffix *–lah* after the imperative verb. Speech intonation in various clauses showed that more initial syllables were stressed and these marked the accented points as they were shown in the pitch contours. The use of particle '*ok*', or sometimes perceived as '*og*' [o?] hardly appeared as level tone, and mostly in falling contour, giving sense of asking for confirmation or clarification to a certain context. Phonological process was found as in nasalized vowel, although it is not remarkably perceived. Speech durations distinguish the elder native speakers (with speech rate 71 ms – 125 ms per syllable) from the younger speakers (146 – 209 ms per syllable), who do interactions frequently with non-resident speakers of Sungailiat. The Interference of culture in daily communications prompts that the native speakers of this dialect maintain the bond of kinship within the community, as shown prosodically in speech.

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