

# Father as a Caregiver: The Thipology of Father Parenting Style While Mother doesn't Exist and the Effect to Child Autonomy

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Abstract: This study investigated the characteristics (place and duration) of the vowel contrasts produced by Indonesian students of English and whether they contrasted the lax and tense vowels. Ten female students participated in this study. The data were collected through a listening and speaking task focusing on the vowel contrasts and analyzed using acoustic analysis. The findings showed that the participating students produced the /u/ and / / at the relatively expected locations and contrasted them, but not the other vowel contrasts (/ / and /æ/ and /i/ and /i/). In terms of duration, the vowels produced by the participants were inconsistent, and they were not contrasted. These findings are interpreted as a support to the previous study, and advocate for more pronunciation instruction through listening exercise to expose the difference of the lax and tense vowels.

## 1 INTRODUCTION

The main aim of learning a language is to be able to communicate with people who speak that particular language. In order to achieve the aim, Jenkins (2000) suggests that language learners should be able to be intelligible when speaking to the native speakers or other speakers of that language. Therefore, it is important for language learners to avoid errors in producing segmental (individual sounds) and suprasegmental features such as pitch and rhythm that will cause communication breakdowns. Even though both segmental and suprasegmental units are important, Jenkins' (2000) study showed that errors in segmental units tend to be more problematic than suprasegmental, especially when the errors occur frequently due to the speakers' inability to produce the proper ones. Nonetheless, not all errors in segmental units will cause communication breakdowns. There are some segmental units that are more problematic than others. These units are considered to have higher functional load because when a speaker does not produce them correctly, a communication misunderstanding or breakdown will be inevitable. Therefore, it is necessary for language speakers to be aware of this risk and learn how to be able to produce them correctly.

Even though Jenkins (2000) claimed that vowel quality does not affect intelligibility, a study conducted by Deterding and Mohamad (2016) provides evidence that vowel quality was involved in a substantial number of communication breakdown occurrences found in the Asian Corpus of English (ACE), one occurrence became a strong support of how vowel quality became the main factor of a communication breakdown.

It is believed that language learners will find the segmental unit production challenging if the features either do not exist or are different to those of their mother tongue. For Indonesian speakers of English, vowel production can be problematic since the vowel system in Indonesian language is not similar to that of English because English has lax and tense vowel pairs. These vowel pairs indeed have high functional loads (Brown, 1991), especially when the vowels are in taboo words. For example, the minimal pairs *beach* [bit ] and *bitch* [bitʃ]

Koffi (2016) also believed that if the vowel pairs are not contrasted by at least 61 Hertz, the listeners will not be able to perceive them well. Unfortunately, Indonesian speakers of English who lived in the USA only contrasted the dimension of the /u/ and / / (Caromawati & Muhammad, 2015). As to our knowledge no studies have been done on vowel contrasts of Indonesian learners of English learning

the language in higher education, we were interested in investigating their production.

Based on the aforementioned motivation, this study sought answers to these following research questions:

1. What are the characteristics of vowel contrasts / //æ/, /u//ʊ/, and /i//ɪ/ of Indonesian learners of English regarding their place of articulation and duration?
2. Do Indonesian learners of English contrast the lax and tense vowels?

## 2 METHODS

### 2.1 Data Collection

There were ten female learners of English from a private university in Indonesia participated in this study. There were no particular reasons for choosing female students. However, it is strongly believed that two genders have different pronunciation characteristics. Peterson and Barney (1952) mentioned that due to the difference in size of men and women, women have higher resonance frequencies than men. This fact became our consideration to include one gender only. These participants had very low score on a paper-based TOEFL-like, under 425 and had never been to an English speaking country. However, when the study was conducted, they were studying English in a private university in Bandung, and we assumed that they were exposed to English language outside the classroom, such as through movies, songs, etc.

These participants were asked to listen to audio files of an American English speaker saying a carrying phrase "Now I say ..." followed by a token containing the target vowels / //æ/, /u//ʊ/, and /i//ɪ/ with one consonant before and after them, which is referred to what we call *a frame*. In this study, we used four CVC frames, F\_L, H\_D, P\_L, and P\_T.

These frames were acknowledged by the participants who were asked to focus only on the vowels. Before they recorded their voice, the learners were allowed to listen to the audio as many times as they needed until they were confident with what they heard from the recording, and then repeated it. In total, each participants produced 24 tokens. Therefore, there were 240 tokens recorded using Audacity and analyzed to answer the two research questions in this study.

### 2.2 Data Analysis

The 240 tokens gathered from the learners' recorded data were analyzed through acoustic analysis. This analysis used PRAAT as a tool that can measure the vowels formants and durations. Only formant 1 (F1) and 2 (F2) were measured for the purpose of this study since these two formants are associated with the height and frontness of the vowels (Ladefoged & Maddieson, 1996) cited in Baart (2010: 66). These formants were taken at the midpoint of the vowel soundwave to ensure the pureness of the vowels (see Figure 1). The durations, on the other hand, were measured by considering the intensity and the periodic shape of the soundwave as the characteristic of vowels (Baart, 2010). The measured formants and duration data were later logged in a spreadsheet file. The data from the two of us were combined and the mean from both data sources were used as the main information. This information were imported into PRAAT to create the vowel chart to answer the first research question. Additionally, the numbers of the formants and durations were calculated to get the standard deviation to see the consistency of them. To answer the second research question, the numerical data of the formants and durations of each vowel contrast were compared and t-tests were run to investigate whether the learners of English contrast the vowels.

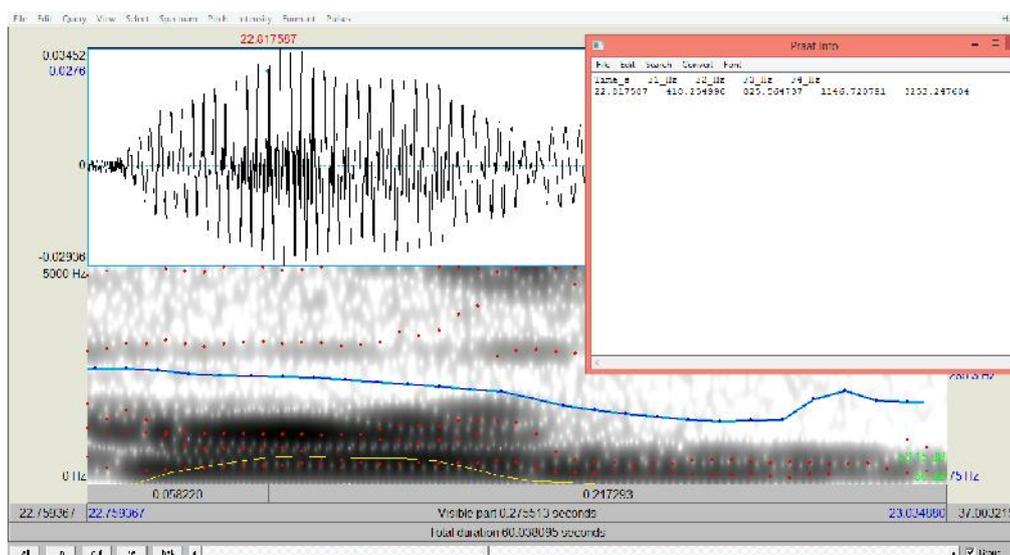


Figure 1: One of the *who'd* tokens analyzed in PRAAT to get the formants at the mid-point.

### 3 RESULTS AND DISCUSSION

The results from the acoustic analysis performed by the two of us provided answers to the two research questions. In this study, the formant frequencies were set in Hertz and the durations were in milliseconds.

#### 3.1 The characteristics of vowel contrast production of Indonesian learners of English

Figure 2 illustrates the dimension of the vowels produced by the learners. The height is indicated by F1 as the X axis, and the frontness is indicated by F2 as the Y axis. The average F1 and F2 are illustrated by colors in the chart (red, blue and green) and are placed in the circular shapes. The figure shows that the learners tend to produce /i/ & /ɪ/ at the slightly central part of the mouth. Supported by Table 1 which provides statistical data indicating F1 (552 and 527) and F2 (2038 and 2246) for the /i/ & /ɪ/ sounds. This dimension is slightly different to those of the female North American English (NAE) speakers. As found by Peterson and Barney's (1952) study that the common dimension for female NAE speakers are 310 & 430 (F1); 2790 & 2480 (F2). Additionally, it is interesting to find that the learners tend to have the tense vowel /ɪ/ at a higher position than the lax vowel /i/.

The / / & /æ/ were produced at the lower center of the mouth with the dimension of 739 & 763 (F1); 1587 & 1566 (F2). Compared to those of the female

NAE speakers, these sounds were more backward because the female NAE speakers have F1 of 610 & 860 and F2 of 2330 & 2050. The /u/ & /ʊ/, on the other hand, were produced at the lower back of the mouth with the dimension of 506 & 544 (F1) and 918 & 1051 (F2). These dimensions are relatively similar to those of the NAE speakers, except for the / / sound which was slightly lower. According to Peterson and Barney (1952), the dimensions of /u/ & /ʊ/ for females NAE speakers are 470 & 370 (F1) and 950 & 1160 (F2). Regardless the similarities found in the dimensions of the average formant frequencies, the standard deviation (shown in Table 1) indicates the inconsistency of the formants. It can be seen in the vowel chart (Figure 2) where the vowels are scattered all over the place.

Regarding the duration of the vowels, the average durations for / /, /æ/, /u/, /o/, /i/ and /ɪ/ are 178 ms, 194 ms, 173 ms, 175 ms, 177 ms, and 185 ms successively. It means the vowels produced by the participants were relatively similar in terms of duration. Additionally, similar to the dimension of the vowels, the learners were also inconsistent with their vowel duration indicated by the relatively high standard deviations (see Table 1). It may indicate that they did not have the sounds in their long-term memory. However, this assumption needs further investigation.

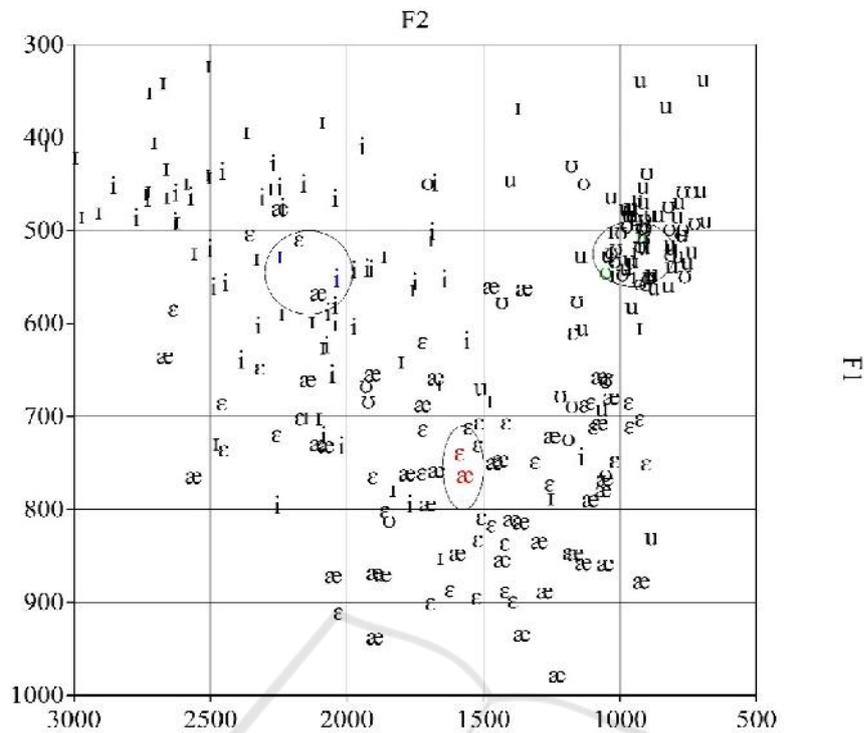


Figure 2: The vowel chart drawn in PRAAT to illustrate the height (F1) and frontness (F2) of the vowels.

### 3.2 The contrast of the lax and tense vowels

To find out whether the learners contrasted the lax and tense vowels, we interpreted the results from the t-test. We set the statistical significance ( ) at 1%. As seen in Table 1, the results showed that the learners did contrast the dimension of /u/ & / / with the p-

value of 0.04 (F1) and 0.02 (F2), but they did not contrast the durations ( $p$ -value=0.93). The /i/ and /ɪ/ were contrasted only by their frontness ( $p$ -value=0.07), but not their height or F1 ( $p$ -value=0.34) nor their durations ( $p$ -value=0.55). On the contrary, the / / and /æ/ were not contrasted at all. This support what Figure 2 illustrates: the vowels are close to each other and even overlapped.

Table 1: The statistical data of the formants and duration of the vowels.

Vowels	N	F1			F2			Duration		
		Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
æ	40	739	100	0.32	1587	479	0.84	178	60	0.22
	40	763	114		1566	445		194	54	
u	40	506	70	0.04*	918	168	0.02*	173	63	0.93
	40	544	93		1051	310		175	69	
i	40	552	100	0.34	2038	469	0.07*	177	61	0.55
	40	527	134		2246	548		185	64	

= 0.01

\* significant

It is interesting to find that these students contrasted the place of articulation of /u/ and / /, but

not the other two vowel contrasts. It might be caused by the fact that /i/, /ɪ/, /ɛ/, and /æ/ are neighboring

vowels. To prove this assumption, more studies and/or more data are needed.

## 4 CONCLUSION

The results of the study show that Indonesian learners do not really contrast the lax and tense vowels, except for the dimension of one of the vowel contrasts. The learners were inconsistent through most of the vowels production in terms of articulation and duration. There are many possible factors which may cause it, such as the interference of their first language and/or the lack of exposure to pronunciation. These speculations, however, need further investigation. Based on the findings of this study which appears to be a support for the study conducted by Caromawati & Muhammad (2016), it is important and necessary for Indonesian learners of English to be exposed more to pronunciation instruction, as suggested by Celce-Murcia, Brinton, Goodwin, & Griner (2010). For further direction, we think it is important to investigate the roles of pronunciation instruction to learners' ability in differentiating the vowel contrast such as a study conducted by Wang & Munro (2005). In addition to that, it is also necessary to look at Indonesian learners' perception skills in discriminating these vowel contrasts.

## REFERENCES

- Baart, J. L. 2010. *A field manual of acoustic phonetics*. Dallas, TX: SIL International.
- Brown, A. 1991. Functional load and the teaching of pronunciation. In A. Brown (Ed.), *Teaching English Pronunciation: A book of readings*. New York: Routledge.
- Caromawati, C., Muhammad, A. 2016. The monophthongal English vowel production of Indonesian learners of English with different proficiency levels. Iowa State University, Ames, IA, USA.
- Celce-Murcia, M., Brinton, D. M., Goodwin, J. M., & Griner, B. 2010. *Teaching pronunciation: A course book and reference guide*. New York: Cambridge University Press.
- Deterding, D., Mohamad, N.R. 2016. The role of vowel quality in ELF misunderstandings. *Journal of English as a Lingua Franca*, 5(2). DOI: 10.1515/jelf-2016-0021
- Jenkins, J. 2000. *The phonology of English as an international language*. UK: Oxford University Press.
- Koffi, E. 2016. Relevant Acoustic Phonetics of L2 English: Focus on intelligibility. *Course Manuscript: St. Cloud State University*.
- Maddieson, I., Ladefoged, P. 1996. *The sounds of the world's languages*. Oxford: Oxford University Press.
- Peterson, G. E., Barney, H. L. 1952. Control methods used in a study of the vowels. *The Journal of the acoustical society of America*, 24(2), pp. 175-184.
- Wang, X., Munro, M. J. 2004. Computer-based training for learning English vowel contrasts. *System*, 32(4), pp. 539-552.