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The Comparison of the Phonological Features of Sikka Language and English

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The paper is aimed to find out: (1) the similarities and the differences of segmental features of Sikka language and English, and (2) the appropriate way to solve the problem of phonological teaching in Maumere. The data was collected from EFL participants who were their mother tongue are Sikka language, one of local languages in Maumere East Nusatenggara Island, Indonesia. To collect the data, theAural Phoneme Discrimination test, the Phoneme Recognition test, and Reading test were used. The findings revealed that errors were largely limited to final stops and sibilants, initial and final affricates, and interdentals. The error data did not completely accord with previous findings. A language transfer viewpoint offers an explanation as to why these particular sounds were found difficult for the participants. Patterns in the error data showed that stops were mostly devoiced, and these processes were developmental. The affricates and interdentals were frequently generalized to a stop or sibilant found in the first language. Overgeneralization of these articulatory difficult sounds is a common developmental process. Both transfer and developmental factors and their interaction explain much of the error data, though other factors such as hypercorrection and spelling interference also seem to play a role. An implication of the study is that these systematic, specific errors, dependent on first language, should be taken into account when teaching pronunciation to English learners from these local language groups.

Key words: contrastive analysis, phonetic features, Sikka language

Artikel ini bertujuan mengetahui: (1) kesamaan dan perbedaan fitur segmental antara bahasa Sikka dan Inggris, dan (2) cara yang pas untuk memecahkan masalah pengajaran phonology di Maumere. Data dikumpulkan dari mahasiswa jurusan Pendidikan Bahasa Inggris dengan bahasa ibu Sikka, salah satu bahasa lokal di Maumere, Nusa Tenggara

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Timur. Untuk mengumpulkan data, test 'Aural Phoneme Discrimination,' 'Phoneme Recognition,' dan 'Reading' digunakan. Hasil penelitian menunjukan bahwa kesalahan terjadi pada 'final stops' dan 'sibilants', 'initial dan final affricates', dan 'interdentals.' Kesalahan tidak benar-benar sesuai dengan penelitian lain sebelumnya. Pandangan teori transfer bahasa menjelaskan tentang mengapa suara khusus ini sulit bagi partisipan. Pola pada kesalahan menunjukan bahwa 'stops' sering tidak disuarakan, dan proses ini berkembang. 'Affricates' dan 'interdentals' seringkali menjadi 'stop' atau 'sibilant' pada bahasa kedua. Secara umum, artikulasi suara yang sulit ini merupakan proses perkembangan biasa. Faktor-faktor perkembangan dan transfer, serta interaksinya, banyak menjelaskan kesalahan, meskipun faktor lain seperti 'hypercorrection' dan 'spelling interference' juga memainkan peran penting. Impikasi penelitina ini adalah bahwa kesalahan spesifik sistemik yang tergantung pada bahasa pertama harus diperhatikan ketika mengajar 'pronunciation' dalam pembelajaran bahasa Inggris pada kelompok penutur lokal.

INTRODUCTION

English is not a phonetic language or written phonetically where a word can have the same written letters but pronounced differently. This inconsistency of the spelling system causes many sounds production problems for non-native English learners when they learn English in its written form to pronounce it since EFL learners who study English tend to produce utterances that are governed by the phonology of their first language (Ellis, 1994). In the process, they will interpret the pronunciation of the words of the foreign language in terms of the phonological elements of their own (Wheelock, 2016). This is acceptable as far as the pronunciation is correct but it will be in error if their mentors do not use the correct pronunciation. On the other way around, since English and Indonesian use similar orthography (the Latin alphabet), the English language spoken by the participants in Maumere in Flores Island is deeply affected by Indonesian phonological rule. It indicates that almost all vowels and consonants of both languages are pronounced similarly. Consequently, learners generalize all of them to sound the same.

In order to minimize the errors in sounds production of English words, the knowledge of sound system skill is inevitably and undoubtedly needed as a crucial part in teaching and learning English as a second or foreign language. The ability to process sound is known as phonological processing skill that refers to the abilities to distinguish and manipulate sounds within spoken words. Rachel (2012) states that one of the key skills is to splitting up a word into its individual sounds, which are also referred to as segments.

The phonological processing skill requires a sufficient practices provided by a competent English teacher who has learnt by heart of a great deal about the system of a language, such as the properties of different sound systems and the use of sounds in particular groups of both L1 and L2 languages. With his competency, he can train his participants to perceive sounds that they learn and distinguish the sound of L1 and L2. Ladefoged (2011) also states that people perceive sounds based on the way they produce those sounds and that "people cannot hear differences between sounds until after they have learned to make these differences" (p. 167). Hence, the research of this nature is highly imperative in order to highlight phonological areas of the two languages. This would help the learners and teachers of English become aware of the 'trouble areas' when it comes to learning to pronounce English words correctly. Nonetheless, the results of this study would facilitate teachers and predict the areas of English pronunciation difficulties for the participants that are largely caused by the differences between the English and Maumere phonetic systems and the 'transfer' of the phonological features of their native language.

It is necessary to mention that there are several factors that need to be considered to be potential obstacles for a foreign language learner through acquisition of correct pronunciation.

Those factors can be age factor, phonetic ability, lack of practice, motivation, personality or attitude, and mother tongue. (Riswanto & Haryanto, 2012).

Regarding phonological interferences of Indonesian on English, Dardjowidjojo (1978) states that the source of pronunciation problems of Indonesian participants in learning English lies in the differences between the two languages. Thus, exercises based on a careful contrastive analysis are the best for the teaching of pronunciation and for the findings of the discrepancies and similarities. Similarly, Keating (2013) states that Indonesian speakers of English have problems resulted from L1 (first language) interference. In terms of pronunciation, many Indonesians have trouble pronouncing consonant clusters (3 or more consonants together in a word), as these clusters do not occur in Bahasa Indonesia.

There have been some previous studies related to the contrastive analysis on English and Indonesian. Weda (2012), for example, found that /b. d, g, z, s, ʧ, ʤ/ do not exist in the final positions of the word in Indonesian language, while /p, t, k / are never aspirated in Indonesian words wherever they occur. /r/ is never pronounced clearly in English, but in Indonesian language this /r/ is always articulated clearly wherever it occurs in the words. The third group is that the spelling of English words. For examples, /s/ is sometimes pronounced as /z/ in English, and /a/ is also sometimes pronounced as /æ, ə, e/. However, the comparison of Indonesian language and English is not fundamentally accurate because Indonesian language spoken by the participants is influenced by their local language and lead them in different accent and pronunciation.The study would be more robust if it compares the mother tongue of the participants and the target language of English.

Another study conducted by Hadi (2013) found out that 10 participants faced troubles in pronouncing several segmental phonemes either consonants or vowel sounds: /p/, /b/, /t/, / ʧ/, / ʤ/, /v/, /θ/, /ð/, /z/, /ʃ /, /ʒ/. This study only applied one method to collect the data. The study would be more robust if the data collection was conducted in different method to get their pure sounds production. Sounds production skill was not determined by one method only.

Based on the brief background above, this study is significantly imperative since it focuses on revealing the cause of difficulties at the segmental level faced by the participants. There are certain consonant sounds in English that are completely absent in Sikka language. This condition poses a serious problem in the learning of the English language by learners. There is a lack of knowledge regarding what aspects to teach and how to teach English phonology among the English teachers in Maumere.

METHOD

This study undertook the phonological problem by making a comparison and contrast between English language and Sikka language using contrastive analysis. It was concerned with the comparison and contrast of the two languages to determine their areas of similarities and differences with their implication on language learning and teaching. The method was proposed by Whitman (1970). The same method was conducted by Muslim, Jalis, and Rahim (2017) from the Faculty of Modern Languages and Communication, Universiti Putra Malaysia. Another previous study was conducted by Dost (2017) in Iran (2017).There are four steps as components of contrastive analysis: (1) taking two languages, L1 and L2, and writing formal descriptions of them (or choosing descriptions of them), (2) picking forms from the descriptions for contrast, (3) making a contrast of the chosen form, and (5) making a prediction of difficulty through the contrast.

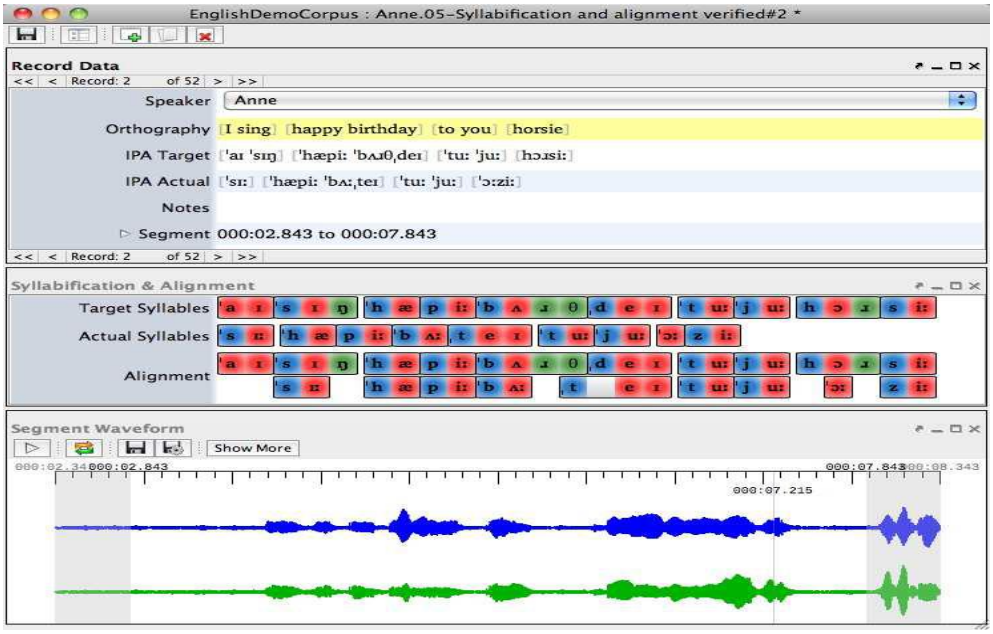
This research took place at Muhammadiyah Institute of Teacher Training and Education in Maumere. The data were obtained from 20 adult native speakers of Sikka language. To collect the data, the study used Aural Phoneme Discrimination Test, Phoneme Recognition Test, and Reading Aloud. The first technique, Aural Phoneme Discrimination Test, was based on minimal pairs.The participants were requested to circle the letter **a, b** or **c** to show whether

it was the first, second or third word which was the different one, for example, "Tell me the word that is different one in ***a. grief b. grief c. grieve***." The second one was Phoneme Recognition Test: the participants heard three words and were requested to choose same sounds among the words and repeat the word; for example, "Tell me the different sound in thin and tin."The third technique is Reading Test in which each subject recorded his voice onto an audio-cassette.

The data was analyzed using a free downloadable application called Phon (https://www.phon.ca/phontrac).This application was built to support the research in phonological development such as babbling development, second language acquisition, and phonological disorders.This application supported unit segmentation such as utterance and word, multiple-blind transcription, automatic labeling of data (features, syllabification), and systematic comparisons between target (model) and actual (produced). Phon brings together two of the most important areas of empirical investigation in the area of phonology, as it integrates transcript-based analyses of phonological data with the facilities for acoustic analysis provided by another free downloadable application called Praat (http://www.fon.hum.uva.nl/praat/).

Phon is a software program that facilitates a number of tasks related to the analysis of transcript-based and acoustically-measured speech data. It is built to support research in phonological development (including babbling), second language acquisition, and phonological disorders. Phon can also be used for virtually all types of phonological investigations (e.g. loanword phonology, fieldwork in phonology, sociolinguistic studies). Phon supports multimedia data linkage, unit segmentation (e.g. utterance, word), multiple-blind transcription, automatic labeling of data (features, syllabification), and systematic comparisons between target (model) and actual (produced) phonological forms. Phon is also equipped with many facilities for data analysis, including query methods for phonology (e.g. phones, features, syllables, …) as well as acoustic data.

Figure 1: Phon general interface



FINDINGS AND DISCUSSION

The Aural Phoneme Discrimination Test

In this section, the 20 participants were asked *to listen and circle the letter A, B or C*:

Table 1. Findings of the aural phoneme discrimination test

Items	Test 1	Error made by Participants	Percentage (%)
1	Initial v	Sound f	45
2	Initial z	Sound s	45
	Initial d	Sound t	35
4	Initial ʃ	Sound ç	40
5	Initial ð	Sound t	30
		Sound ʂ	45
6	Initial θ	Sound t	70
7	Initial ʧ	Sound c	35
8	Initial ʤ	Sound ĉ	35
		Sound z	35
		Sound ʣ	35
9	Final ʤ	Sound ç	35
		Sound ʣ	35
10	Final v	Sound f	40
11	Final z	Sound s	45
12	Final ʃ	Sound ç	40
13	Final θ	Sound t	70
14	Final ð	Sound t	50
		Sound ʂ	45
15	Final ʧ	Sound ʦ	35
		Sound ĉ	**45**

The result revealed that firstly the smallest percentage of errors made by participants (35 %) was the initial /d/ sound which was heard as /t/. The initial /ʧ/ and final /ʧ/ were heard as /ĉ/ by **or 45% of the** participants. The initial /ʤ/ sound was uniquely heard as 3 (three) distinctive sounds pattern. They were /z/ sound heard by participants **or 35% of them**; /ĉ/sound was heard by participants **or 35% of them, and /ʣ/ sound was heard by 25% of them**. The final /ʤ/ was sometimes heard as /ç/ by 35% of the participants and /ʣ/ by 35% of the participants. The initial /ð/ sound was sometimes heard as /t/ sound by 30% of the students.

Secondly, some participants **(40 to 45%)** had some difficulty in differentiating initial and final [v] sound with [f] sound, while initial and final [z] sound was heard as [s] by **or 45% of the** participants. The initial and final [ʃ] sound was realized as [ç] by **or** 40% of the participants. The initial [ð] sound was sometimes heard as [ʂ] by **45% of them.**

Finally, the final [ʧ] sound was heard as [ĉ] or 50% of them. The final [ð] sound was sometimes heard as [t] sound by **50% of** participants and some of the students was heard as [ʂ] by 4**5% of** participants. The final [z] was realized as [s] voiceless alveolar fricative by 60% of

the participants. The sound [θ] was the most problematic sounds both initial and final sound, **70% of** participants **being heard as [t].**

The Phoneme Recognition test

The participants are requested to read it and choose the different sounds among the words. For every item the researcher circles the word that each response was closest to or noted down where the response was something different. The responses to this second test are also played back by the researcher, particularly to determine the sounds being substituted.

Table 2 Findings of the phoneme recognition test

Items	Test 1I	Error made by Participants	Percentage (%)
1	Initial b	Sound b̲	25
2	Initial p	Sound p̄	35
3	Initial v	Sound f	35
4	Initial ʃ	Sound ç	40
5	Initial θ	Sound t	65
6	Initial ð	Sound ç	45
7	Initial ʧ	Sound ç	35
8	Initial ʤ	Sound ʣ	25
		Sound ĉ	35
		Sound z	35
9	Final b	Sound p	25
10	Final d	Sound t	80
11	Final v	Sound f	45
12	Final z	Sound s	40
13	Final ʃ	Sound ç	45
14	Final θ	Sound ʂ	25
		Sound t	70
15	Final ð	Soundt	45
		Soundʂ	45
16	Final ʧ	Soundç	40
		Soundʦ	60
17	Final ʤ	Sound ʣ	30

Table 2 shows that, first, the initial [b]sound was perceived as [b̲] sound by 25% of the participants. The initial [ʤ] sound was **heard by 25% of them**. The final [b] sound was perceived mostly as [p̄] by **or** 25% of the participants.

Second, the initial [p] sound was perceived as [p̄] sound by 35% of the participants. The initial [v] sound was perceived as [f] sound by 35% of the participants. The initial [θ] sound was perceived as [t] sound by 65% of the participants. The initial [ʧ] sound was perceived as [ç] sound by **35% of the participants**. The initial [ʤ]sound was uniquely heard as distinctive sounds pattern; they were [z] sound heard by participants **or 35% of them**; [ĉ]

sound heard by participants **or 35% of them, and** the final [d] sound was perceived as [t] by **35%** of the participants. The final [ʤ] was realized as [ʣ] by 30% of the participants.

Third, the initial [ʃ] sound was perceived as [ç] sound by 40% of the participants. The initial [ð] sound was perceived as [s̪] sound by 45% of the participants. The final [v] sound was perceived mostly as [f] by **45%** of the participants. The final [z] was perceived as [s] by 40% of the participants. The final [ʃ] was perceived as [ç] by **45% of the** participants. The final [ð] was perceived as [t] by **45%** and [s̪] by **45%**. The final [d] sound was perceived mostly as [t] by **80%** of the participants.

At last, the final [ʧ] was realized randomly as [ʦ] by 60% of the participants, and 40% of them realized it as [ʣ]. The final [θ] sound was realized mostly as [t] voiceless dental stop by **70%** of the participants and 25% of them realized it as [s̪].

The Recorded Reading Aloud

The third test was a reading aloud in which each subject was recorded into an audio-cassette. The speakers were instructed to read the passages which were intended to elicit the English sounds production skill from the speakers; they were constructed to include phonemes and phoneme sequences that are present in English but not in Sikkanese.

Table 3 Findings of the Reading test

Number of Item	Test III	Error made by Participants	Percentage (%)
1	Initial z	Sound s	45
2	Initial t	Sound t̪	30
3	Initial d	Sound d̪	35
5	Initial ʃ	Sound ʦ	25
		Sound ç	25
6	Initial θ	Sound t̪	70
		Sound s̪	25
7	Initial ð	Sound s̪	25
		Sound ʦ	25
8	Initial ʧ	Sound ʦ	25
		Sound ç	35
9	Initial ʤ	Sound ʣ	25
10	Final b	Sound p̄	25
11	Final d	Sound t	35
12	Final v	Sound f	45
13	Final z	Sound s	45
14	Final ʃ	Sound ç	45
15	Final θ	Sound t̪	70
		Sound s̪	25
16	Final ð	Sound s̪	45
		Sound t	45
17	Final ʧ	Sound ʦ	60

		Sound ç	40
18	Final ʤ	Sound ʣ	30

Table 3 indicates that, firstly; the initial/z/ was uttered as /s/ by 45% of the participants. The initial /t/ was uttered as /t̪/ by 30% of the participants. The initial /d/ was uttered as /d̪/ by 35% of the participants. The initial sound /θ/ was uttered differently, with 25 % of participants **as /ʂ/, and 70% of them uttered it as /t̪/.** The same case was initial /ð/ sound, the initial /ʃ/ sound, the initial/ʧ/ sound, the final /θ/ sound, the final /ð/ sound, and the final /ʧ/ sound. The initial/ð/soundwas uttered **as /ʂ/ by 25%** of participants and 25% of them uttered it as /ʦ/ sound**;** the initial/ʧ/sound was uttered **as /ʦ/ by 25%** of participants, and 35% of them uttered it as /ç/ sound. The initial /ʤ/ sound was uttered as **/ʣ/ by 25% of the participants.**

Secondly, the error was found in the final sounds. The final /b/ sound was uttered as /p̄/ by 25% of the participants; the final /d/ was uttered as /t/ by 35% of the participants. The final /v/ was uttered as /f/ by 45% of the participants, and the final /z/ was uttered as /s/ by 45% of the participants.

The final sound /θ/ was uttered differently, 25% of participants **as /ʂ/ sound and 70% of them uttered it as /t̪/.** The same case was final /ð/ sound, and final /ʧ/ sound, final /θ/ sound, final /ð/ sound, and final /ʧ/ sound. The final /ð/ sound was uttered **as /ʂ/ by 45%** of participants and 45% of them uttered it as /t/ sound**;** the final/ʧ/ sound was uttered **as /ʦ/ by 60%** of participants and 40% of them uttered it as /ç/ sound.

The errors found in bilabial was the initial [b] replaced by [b̲] and initial [p] replaced by [p̄], dental sound [d] replaced by [t̪], alveolar sound [z] replaced by [ʂ] mostly by the participants with Sikkanese speaking background from the northern and eastern Maumere region. It is pretty clear that the sound shifting reason was trigged by the participant's local language. In some Austronesian language family like Sikkanese, most of the consonant sounds occur as an allophone of flap in careful pronunciation.The reason for shifting is the fact that the error sounds are regarded, as they are two allophones of one phoneme (Asian Language Notes, 1983).

On the other hand, the errors found in initial bilabial was [b] replaced by [b] and initial bilabial [p] was replaced by [p], with final dental sound [d] replaced by [t], final alveolar sound [z] replaced by [s] mostly by the non-Sikkanese speaking background participants who use Indonesian as their first language from the central and western Maumere region. The sound shifting reason was trigged by the Indonesian language (Asian Language Notes, 1983).

The errors of final dental [d] replaced by another dental sound [t] or [t̪] was obvious because of the interference of either Indonesian or Sikkanese as the participant's mother tongue since a word written 'd' or 't' at the end of a word were both pronouncod as [t] or [t̪]. The same case occured in final [ʂ] or [s] for final [z] which also occurs in Sikka language; "written 'z' or 's' at the end of a word are both pronouncod as [ʂ] or [s]. Another case is written 'f' or 'v' at the end of a word are both pronouncod as [f] (Asian Language Notes, 1983).

The errors found in the voiceless interdentals produced [θ]. Sikka language has a laminal alveodental fricative with a wide channel area as an allophone of [ʂ]. It is a sound between [ʂ] and [θ] (Asian Language Notes, 1983). It seems to enable some of **the** participants to produce an acceptable [θ]. The tongue tip for **the** sound [ʂ] is further forward than for English, and can even be made interdentally to pronounce as a sound much closer to [θ], but there is no [θ] sound word in Sikka language found in final position. This may help some of **the** participants specifically from **Sikkanese speaking background** to find the correct place of articulation for initial [θ] but contributed toward the errors at the same time for final [θ].

Surprisinglly, [ʧ] and [ʃ] was the sound to be heard incorrectly as [ʦ] and [ç] in the reading passage but mostly repeated correctly. The [ʧ] sound in 'leisure' was especially problematic perhaps 's' in spelling can be pronounced [s], [z], [ʃ] or [ʒ] in different words. On

the other hand, the pronunciation of [ʃ] in‘chocolate' was spelling interference may be related to confusion between the 'ch' and the more common English sound [ʒ]. The errors might be related to the phonetic environment. In the repetition test, words are always individually uttered whereas the words in the reading passage may be influenced by the following sound.

CONCLUSION

The students in Maumere who learn English as a foreign language face a number of clear cross-language phonetic differences. To produce English sounds without Sikka language phonological interference, the students need to modify the existing of Sikka language phonological patterns of phonetic implementation and acquire English-specific patterns.

English teachers need to be trained to obtain a thorough knowledge of the English sound system and the appropriate intelligible models to encourage them to devote time specifically to focus on phonemes that are identified to have caused problems for the learners. It is highly recommended that these phonological process strategies be introduced into appropriate coursework.

It is recommended that future studies need to be conducted due to the limited number of studies in this field. Moreover, future research could be improved by involving larger sampling groups that are balanced in gender and age orientation.

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