UNDERSTANDING VARIOUS RESEARCH TOOLS TO INVESTIGATE PRONUNCIATION ERRORS OBSERVED AMONG INDONESIAN EFL LEARNERS: SOME THEORETICAL NOTES TO ATTEND

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Abstract

This article is about the main theoretical framework adopted in the analysis of, especially, pronunciation errors. Such theories as Contrastive Analysis Hypothesis, Error Analysis, Language Universals, and Markedness Differential Hypothesis, all of which are interlingual suggest that interlingual differences as well as similarities create pronunciation problems. In this work, several types of errors as postulated by many scholars are presented to intricate with the theories being discussed. Note that first, according to the scholars, not all points of difference between the linguistic structures of L 1 (first language) and L2 (second language) create the same extent of errors. Divergent contrasts (dissimilarities) seem to be more readily acquired than convergent contrasts (similarities). Contrastive analyses are of two versions, strong and weak. Second, in general, cross-linguistic differences, regardless of the error type, should not necessarily hinder learning as long as enough explicit instruction and sufficient exposure to target-like pronunciation are provided.

Key words: interlingual differences, (dis)similarities, divergent contrast, convergent contrast, strong vs. weak contrastive analysis

INTRODUCTION

Pronunciation has not received a lot of attention in the teaching and learning process in many schools in Indonesia. Little, if any, phonology is included in the teaching and learning materials publicly published The Communicative Language Teaching and Learning seems not to provide enough room for the phonological aspects of language acquisition to be explored. This theory holds that fluency is more essential than accuracy. Fluency comes before accuracy. Fluency is considered obligatory while accuracy is optional and pronunciation is addressed only when an utterance is unintelligible or brings communication to a halt. This is because communication is essentially constructed from (1) information gap, (2) expression choices, and (3) feedback. Information gap is characterized by new information seeking by the interlocutors. Choices are different sentences/ways an interlocutor exchanges information. There are various ways to ask somebody's name. As for feedback, it is responses made in the process of communication, without which communication will not take place. This is also to indicate that communication takes place.

Even though the phonological aspect is only given a very minimum focus of attention in the curriculum, it does not mean that the students face only minor pronunciation problems in their

study of English. A great number of students exhibit various pronunciation errors regardless of their levels of language competence: either basic, intermediate, or advanced. Some pronunciation problems even seem to follow the students straight through the three different levels. The latest is the domain of fossilization issue in the language acquisition process. Errors are attributable to various sources, as a matter of fact.

Some interlingual phonemic differences between Bahasa Indonesia (BI) and English can be one of the attributes. The interdental fricatives /θ/ and /ð/, for instance, create pronunciation problems because Bahasa Indonesia does not have those sounds in its phonemic inventory. As a result, a word like <three> is often pronounced as either [sri] or [tri], while <though> is usually pronounced as [do].

Phonetic differences between BI and English are also responsible for the errors. A phonetic process such as spiration, for instance, plays an important role in English but receives little attention by Indonesian speakers of English. Students do not notice that /p/ in <pin> that a native speaker produces is different from theirs. The puff of air following the sound is hardly noticed. As a result, BI speakers of English would commonly pronounce it as [pɪn], instead of [pʰɪn].

Distributional problems are also observable. These problems exist because of the dissimilarity of the distributional systems of the two languages. Phonemically, BI and English share almost all the consonant phonemes. However, they differ in the distributional systems. For instance, both English and BI have the sibilants /ʃ/ and /ʤ/. Indonesian speakers have no problems pronouncing these two sounds as syllable onsets. Nevertheless, these sounds create problems when they occur in syllable codas. For instance, <cash> is pronounced as [kɛs], and <george> becomes [ʤɔʧ], [ʤɔʃ] or [ʤɔs] (<George Bush> is pronounced as [ʤɔs bus]).

DISCUSSION

The Tools for Analysis

The Contrastive Analysis Hypothesis

One of the most important factors governing second language acquisition is the transfer of L1 (first language) pronunciation to L2 (second language) (Yavas, 1994). Various approaches have been proposed to deal with linguistic transfer. Contrastive Analysis holds that second language acquisition is filtered through the learners' first language. If the target language and the native language forms are structurally similar, this results in *positive transfer*. However, when the forms in L1 and L2 are dissimilar, *negative transfer* ensues. The more distinct the two languages are, the more difficult the Target Language (TL) to acquire. This notion has been the topic of many studies under Contrastive Analysis (e.g.: Lado, 1957, 1983; Eckman 1987; Broselow 1987). Lado (1983),

for instance, claims that by systematically comparing the two languages we can predict and describe the patterns of the language that will cause difficulties in learning. He argues that:

> to ignore or deny the fact that the native language is a major factor in language learning is like saying that adult minds are blank slates. Previously acquired knowledge and skills inevitably influence our approach to new ones, especially when there are similarities among them, as in the case among languages. (p. 103)

Congruent with Lado's argument, Lenhardtova (1993) asserts that although Selinker, (1972) and Tarone (1987) claim that different processes operate in shaping learners' interlanguage. The result of Lenhartova's research shows that errors made by the subjects could be primarily ascribed to interlingual interference (p.303). However, she does not deny the fact that there are also some errors not attributable to interlingual sources, which she then classifies as non-interference (Zhang, 2023).

Young-Scholten (1985) is of the opinion that interference is still worth pursuing because *divergent contrast* not only *convergent contrast* would also create pronunciation problems. From her study, it was evident that L2 sounds considered similar to the L1 also created pronunciation errors. In the study, as Lenhardtova also noted, Scholten found that there was also a *non-interference* type of pronunciation problems called *developmental problems*. Both scholars, Lenhartova and Scholten, suggest that there are other types of errors than those predicted by Contrastive Analysis.

Strong vs. Weak Contrastive Analysis

The inability of the strong Contrastive Analysis to predict other types of errors beyond the interlinguals calls for further explanation. The previous notion of Contrastive Analysis that learners' learning difficulty is always predictable has raised many difficulties especially in research practices (Wardhaugh, 1983).

Wardhaugh then proposes the Weak Version of Contrastive Analysis. According to him, Contrastive Analysis may be stated in two versions: a strong and a weak one. The strong version claims that the differences of the two languages can predict every error that will occur in the production of the L2. The weak form of the hypothesis, on the other hand, claims that cross-linguistic differences should only be employed to identify and explain some but not all errors. This, then, diminishes the predictive power of Contrastive Analysis. In other words, the weak version of the hypothesis only serves as an ad-hoc explanatory device when such interference is identified in the corpus data. Ellis (1985) agrees to the notion that the weak version still has its uses. However, he proposes that it should work better if employed hand-in-hand with Error Analysis to analyze errors produced by L2 speakers. Ellis argues that:

> The weak form of the hypothesis claims only to be diagnostic. A contrastive analysis can be used to identify which errors are the results of interference. Thus according to the weak hypothesis, contrastive analysis has to work hand in hand with Error Analysis. First actual errors must be identified by analyzing a corpus of the learner's language. Then a contrastive analysis can be used to establish which errors in the corpus can be put down to differences between the first and second language. Implicit in the weak version is the assumption that not all errors are the result of interference. (Ellis, 1985, p.24)

Contrastive Analysis and phonology

For Richards (1983), studies of second language acquisition seem to indicate that contrastive analysis is most predictive at the level of phonology. Ingram (1992) and Pienemann et. al. (1985) share this view. They hold that any research on phonological acquisition must directly confront the questions of cross-linguistic similarities and/or differences. These scholars suggest two things. First, that language transfer is most conspicuous in phonology as opposed to, for instance, syntax and morphology. Secondly, they note that studies of language transfer are still valuable although presently not a whole lot of attention is given to it.

Hammerly (1982) sees Contrastive Analysis and Error Analysis as complementary approaches to dealing with L2 errors. He notes that:

> …it has been the fashion to reject contrastive analysis in favor of error analysis. In fact, both types of studies complement each other. Contrastive analysis can result in more or less accurate predictions and can often provide an explanation for the errors observed. Error analysis can help to confirm or reject the predictions based on contrastive analysis as well as "fine tune" the contrastive analysis so that it will be more accurate; it can also help determine the nature and extent of errors not due to differences between the NL (Native Language) and SL (Second Language). (p. 21)

Thus, in spite of rampant skepticism about the usefulness of Contrastive Analysis, there are reputable scholars who think that Contrastive Analysis is still worth using (Al-Rickaby, 2023), especially in interlingual phonology research.

Error Analysis

It has been shown above that there is a considerable amount of research indicating that interlingual errors are pervasive within second language acquisition, and especially in the field of phonology. As already discussed, interference of First Language (L1) with Second Language (L2) is more attested in phonology than in syntax. We are frequently able to make a good guess about the native language of an English second language speaker when we hear him/her uttering some

sentences. For example, Japanese speakers of English will carry the characteristics of Japanese into their L2. This phenomenon has been the central focus of Contrastive Analysis.While Contrastive Analysis pays close attention to predicting cross-linguistic features that are likely to create problems among learners, Error Analysis focuses more attention to errors that are empirically produced by L2 learners. Considerable research has been done to investigate whether other types of errors than those predicted by the strong version of Contrastive Analysis also emerge in the learner's interlanguage.

Mistakes vs. Errors

In the Error Analysis methodology, errors are tabulated and categorized. Corder (1983) makes a distinction between *unsystematic* errors also called mistakes (slip-of-the-tongue errors), and *systematic* errors called errors. This distinction is useful but not without problems as Corder, himself, points out:

Mistakes are of no significance to the process of language learning. However, the problem of determining what is a learner's mistake and what a learner's error is one of some difficulties…(p.168)

Duskova (1969) also divides errors into two groups: recurrent systematic errors and nonce errors. Nonce errors are those that occur sporadically, once or twice. Young-Scholten (1985) uses her own classification. She distinguishes between developmental and interference errors. Of all these classifications, Richards's (1983) is the most widely spread. His typology includes interlingual (interference) errors, intralingual errors and developmental errors. On p. 200 he equates intralingual errors with developmental errors because they reflect the current stage of the learner's developmental process.

The Markedness Differential Hypothesis

Contrastive Analysis is not the only theoretical framework that theorizes that learning difficulties are predictable. The Markedness Differential Hypothesis states that the phonetic/phonological difficulties that learners will face in learning an L2 is predictable from how marked or unmarked the phonological structures of L1 and L2 are. Languages can differ in that one language (A) may have a structure that is more marked than a corresponding structure in another language (B) (Carlisle, 1994). When the two language systems are different and if the L2 has more complex structures (more marked) than L1, it will be difficult for the speakers of L1 to acquire L2. However, the converse is not true because the speakers of languages with more complex structures usually have less difficulty in learning the second language with less complex structures. This is what Eckman (1987) claimed to be the theory of directionality.

Word-final consonant devoicing is often used as evidence for the Markedness Differential Hypothesis. Eckman, Moravcsik and Wirth (1986); Major (1994); Major and Kim (1999); Eckman (1981); Robinett & Schachter (Eds) (1983); Ferguson et.al. (1992); Yavas (Ed) (1994); Moulton (1962 & 1967); Brakel (1983); and Cairns (1986), all use word final consonant devoicing as an illustration. Word-final voiced obstruents are reported to be more marked than their voiceless counterparts. As a result, it is used as a test case for the

Markedness Differential Hypothesis

Moulton (1962) in his English-German contrastive study predicted that a speaker of German would have difficulties in acquiring the voiced final obstruents of English because German does not have word-final voiced obstruents. Eckman (1981) suggested that since final obstruents voicing was more marked for a speaker of German, it would be difficult for a German to acquire English final obstruents voicing. BI can be counted among the languages that serve as an illustration for the Markedness Differential Hypothesis because final obstruent devoicing also occurs in BI.

In addition to final consonant devoicing, cluster reduction, final consonant deletion, and fricatives/affricates stopping, are all phonological processes that are accounted for by the Markedness Differential Hypothesis. This theory can be used to explain why BI speakers resort to final cluster simplification because final clusters are not common in BI. When BI speakers encounter clusters in the word final position, they usually reduce them. For example, <six> tends to be almost always pronounced as [sik] or [sɪk]. The final [s] is deleted in the pronunciation.

Language Universals

This theory, Language Universals, assumes that all languages share common properties and that differences in their surface are less important. All languages draw on a remarkably finite inventory of sounds and also share similar combinatory systems. For instance, owing to the physiological limitations of human beings, all languages have similar vowels and consonants within which there are sounds contrasting with each other in a predictable manner.

Universal Grammar is in fact more interested in explaining First Language (L1) acquisition as opposed to Second Language (L2) acquisition. Consequently, to explain an L2 acquisition, it will take L1 as a point of departure. Universal Grammar postulates that L1 acquisition of pronunciation is hierarchical. It points to the fact that stops are acquired before nasals; and nasals are acquired before fricatives, as evidence of the hierarchical order that children follow in their L1 acquisition. Similarly, Universal Grammar postulates that the acquisition of L2 phonology will follow a similar pattern. As also in the case of final devoicing, Universal Grammar theorizes that this phenomenon is exceptionally common in children acquiring their L1. At one stage of the acquisition process, there is a span of period when children devoice the final voiced obstruents.

Classifications of Pronunciation Problems

Odlin (1989) defines pronunciation errors as pronunciation patterns that diverge from those found in the target language (p. 215). The divergence that shows systematic variability is worth looking into. Phonetic/phonological errors that keep recurring are indicative of a problem worth analyzing. For the purpose of the analysis of this study, we will differentiate between various aspects of pronunciation problems. Moulton (1962) makes a distinction between four types of pronunciation problems: phonemic, phonetic, allophonic, and distributional. To Moulton's classification we can add Richard's taxonomy. According to Richards, developmental pronunciation errors fall into four categories: 1) overgeneralization, (2) ignorance of rule restrictions, (3) incomplete application of rules, (4) and false hypotheses. Taken together, Moulton and Richards' classifications provide a comprehensive basis for analyzing pronunciation problems.

In the following section, a further discussion on the different types of problems between BI and NAE will be carried out. Interlingual problems will be discussed first, and the discussion on developmental problems will follow.

1. Interlingual Problems

Interlingual problems arise as a result of differences between the linguistic structures of L1 (first language) and L2 (second language). They are composed of phonemic problems, phonetic problems, L1-allophonic problems, and distributional problems.

2. Phonemic Problems

Moulton (1962) defines phonemic problems as problems which are produced as a result of the dissimilarity of the two phonemic inventories (L1 and L2). This dissimilarity leads to the wrong use of phonemes when speaking L2. To see how BI and NAE differ phonemically, let us begin by examining the phonemic charts of English and Bahasa Indonesia.

2.1 The consonants

If diagrams of NAE and BI consonants are placed side by side in the same chart, the predicted phonemic problems stand out clearly as depicted in Figure 1.

		Voicing	Bila-bial	Labiodental	Inter-dental	Alveolar	Alveo-palatal	Pala-tal	Velar	Glottal
Stops		Voiced	b ***b***			d ; ***d ɾ ʔ***			g ***g***	ʔ ***ʔ***
		Voiceless	p; ***p p***ʰ			t ; ***t ɾ*** t ʰ ***ʔ***			k; ***k k*** ʰ	
Fricatives		Voiced		v f; ***v***	ð ***z***	z s dʒ ; ***z***	ʒ			
		Voiceless		f, ***f***	θ	s ***s***	ʃ, s; ʃ		x	h ***h***
Affricates		Voiced						dʒ ***dʒ***		
		Voiceless						tʃ ***tʃ***		
Nasal			m ***m***			n; ***n ɳ***		ɲ	ŋ ***ŋ***	
Liquid	**Lateral**					l; ***l ɬ ɭ***				
	Retro-flex					r; ***r ɾ r***				
Glides			w; ***w/ʍ***					y ***y***	w; ***w/ʍ***	

NAE consonants are in boldface

Figure 1. NAE and BI consonants

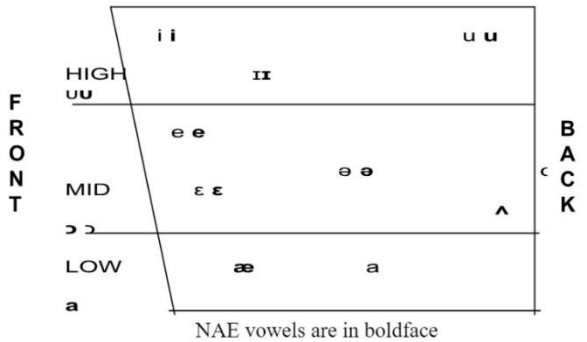
Those in boldface are NAE phonemes. The BI phonemes are cited from Soedjianto, Aminoedin, Razaq, and Marsoedi (1984), while the NAE ones are from Celce-Murcia, Brinton, and Goodwin (1996).

Phonemic errors occur when L1 does not have phonemes that do exist in L2. These errors can create misunderstanding if the L2 sounds substituted with L1 sounds are contrastive in the L2 and different lexical items already exist in the language as is the case of <faith> and <fate>.

2.2 The vowels

Phonemic problems may occur with vowels as well. BI does not have the vowels /æ/ and /ʌ/ in its vowel inventory. As a result BI speakers may not be able to pronounce the vowels in the words like <bat> and <but>. These words are usually pronounced [bɛt] and [bat] respectively.

Below is the figure of both BI and English vowel phonemes. The BI vowel phonemes depicted below are quoted from Soebardi (1973), and the NAE vowel phonemes, in boldface, are taken from Ladefoged (1993).



NAE vowels are in boldface

Figure 2. BI and English vowel phonemes

The figure clearly shows where the differences are located when the two languages' vowel inventories are presented side by side.

3. Phonetic Problems

Phonetic problems are problems that arise as a result of phonetic dissimilarities between BI and English. The same phonemes that appear in BI and NAE might not be pronounced similarly. For example, in English /t/ has different allophones. It may be aspirated, glottalized, or flapped. When /t/ occurs as a syllable onset and the vowel immediately following it is stressed, it is aspirated as in <telephone> [tʰɛləfon]. /t/ is flapped when it occurs intervocalically and the first vowel receives stress but the second one does not, as in <water> [wɔɾər], <better> [bɛɾər], and <later> [leɾər]. And /t/ is sometimes glottalized when anticipating a nasal syllabic as in <button> [bʌʔn̩]and <cotton> [kaʔn̩]. In BI, on the other hand, /t/ is always pronounced as [t] wherever it occurs. Consequently, BI speakers of English are likely to pronounce all NAE /t/'s as [t] wherever they occur. The words <teɳlephone>, <later>, <cotton> are pronounced [tɛləfon], [letər], and [katən] not [tʰɛləfon], [leɾər], or [kʰaʔn̩].

In the above instances, BI speakers do not substitute the NAE /t/ with another phoneme. Instead, they pronounce the /t/ in those words using the same phoneme for different allophones of /t/. This, of course, contributes to their foreign accent.

4. Allophonic Problems

Allophones in the learners' L1 can also be responsible for negative phonological transfer. For instance, in BI the sound /v/ can be pronounced as either [v] or [f] without changing the meaning of the word. <voli> is pronounced as [vɔli] or [fɔli]. The same is true with sounds /s/ and /ʃ/ as in <syarat> which can be pronounced as either [sarat] or [ʃa r a t]. Both pronunciations do not change the meaning of <syarat>. However, if BI speakers pronounce <she> as [si], and <show> as [so], the listeners might not be able to understand what is said especially when the context of speaking is not sufficiently clear.

5. Distributional Problems

Distributional problems, according to Moulton (1962), occur when learners bring with them their L1 distributional habits into the second language, often resulting in the incomprehensibility of their utterances.

Phonemically, English and BI share almost all consonants and vowels. However, they differ in some of the phoneme distributions. In BI, voiced obstruents /dʒ/, /z/, /b/, /d/, /g/, and /v/, for instance, can occur in syllable onsets, but not in syllable codas. When they occur in a syllable coda, a rare phenomenon, Indonesian speakers would normally devoice them. For example, /g/ and /b/

as in <be.dug> (drum), <to.gog> (a character in a traditional puppet show), and <se.bab> (because) are pronounced as [bə.duk], [to.gok], [sə.bap] respectively. As a result, BI speakers may devoice /g/ and /d/ in <bug> and <sad> into [bak] and [sæt].
There are also differences in the position of consonant clusters.

In BI, consonant clusters never appear in syllable codas, but only in syllable onsets. For this reason, Indonesians normally have no difficulties pronouncing consonant clusters in a syllable initial position. However, they usually have difficulties pronouncing clusters in syllable codas.

6. Developmental Problems

Developmental problems are usually characterized by a lack of instruction. Speakers consistently make errors as a result of insufficient knowledge of subject matters such as spelling-pronunciation and word-stress.

6.1 Spelling-pronunciation errors

Developmental types of problems may originate within the structure of English itself. English spelling relies to some extent on a phonemic principle, i.e., to one-to-one correspondence between sound and grapheme. However, since English has more consonant phonemes (24) than consonant graphemes (21), there is often an inconsistency between spelling and pronunciation. For instance, <c> may be pronounced as [k], [s], or [tʃ] depending on its environment.

Inconsistencies also exist in the pronunciation of vowels. The grapheme <oo> is sometimes pronounced [u:] and sometimes [ʊ]. To make it more complicated, English orthographic combination frequently shows no relation to the pronunciation. For this reason, <blood> is pronounced as [blud], <flood> is pronounced [flud] by Bi speakers. The <oo> as in <food>, <foot>, <mood> have [+back, +high, +round, (tense] as their syllable nucleus. So, when the learners encounter <flood> or <blood>, they will pronounce them using the same syllable nucleus as in <food> or in <foot>, resulting in the incorrect pronunciation. The <i+Consonant+e> as in <ice>, <line>, <mine>is pronounced as [ais], [lain], and [main]. However, <examine> does not follow the rule. Another example, the <ei> orthography is generally pronounced as [ey] as in <freight>, <veil>, <neighbor>, and many others. However, there are <ei>s which are pronounced as [i] as in <receive>, <neither>, <receipt>, <deceit>, and some others. This pronunciation problem is the result of overgeneralization of orthographic rules acquired previously. Spelling-pronunciation errors are usually classified as developmental because the speaker is trying to overgeneralize spelling to pronunciation rules. They might not know that English is rich with exceptions.

6.2 Problems with CV- stress

Developmental errors are also composed of errors originating from an incorrect stress assignment when pronouncing L2 words. BI speakers may not understand that their stress assignment of English words is erroneous owing to a lack of explicit instructions of this issue. For instance, they might not know that <project>, <object>, and <present> receive stress on different syllables

depending on their lexical categories.

CONCLUSION

The theories claim that interlingual differences as well as similarities create pronunciation problems. Regardless the seem-to-be obsolete theoretical frameworks, the analytical approaches offered by the aforementioned constructs are still worth using. Such theories as Contrastive Analysis Hypothesis, Error Analysis, Language Universal, and Markedness Differential Hypothesis, all of which are interlingual studies, with several notes can be used to pinpoint the attributes of learners' language errors. Errors that are strongly detectable in the learner English interlanguage are those of phonological problems such as phonemic, phonetic, allophonic, distributional, phonotactic, and other phonological error attributes.

The scholars note that not all points of difference between the linguistic structures of L 1 (first language) and L2 (second language) create the same extent of errors. Divergent contrasts (dissimilarities), naturally, seem to be more readily acquired than convergent contrasts (similarities). In general, cross-linguistic differences, regardless of the error type, should not necessarily hinder learning as long as enough explicit instruction and sufficient exposure to target-like pronunciation are provided.

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