J. King Saud Univ., Vol. 4, *Arts* (2), pp. 91-107 Riyadh (A.H. 1412/1992).

Positional /p,b/ Phonological Variability in the Speech of Arabic EFL Students

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(Received 30/7/1410; accepted 14/3/1411)

Abstract. This article reports the findings of an experiment testing the relationship between position and production of /p/ /b/ phonemes by adult learners of English in Saudi Arabia. Contrastive analysts have assumed that since Arabic does not have a /p/ phoneme, Arab learners of English will uniformly substitute the /b/ phoneme in all positions until the divergent negative transfer has been corrected. However, recent studies in second language acquisition suggest that there are other operatives affecting pronunciation in the target language. One of these variables is the position of the phoneme, whether it occurs initially, medially, or finally. The findings of my study confirm the importance of position as a determiner of phonological competence: The Arabic EFL subjects of this study at all levels manifested minimal problems with the /p/ phoneme in the final position. In the medial position where the /p/ occurs before either a consonant or a vowel and in the initial position where the /p/ occurs before a vowel, beginning learners exhibited greater incidence of error, but this incidence declines steadily at the ascending levels. In the initial position where the /p/ phoneme occurs before a consonant, beginners show a relatively small incidence of errors, but this incidence declines slowly at the ascending levels.

Introduction

The most difficult task in language learning is to acquire good pronunciation in the target language (TL).[1] Scovel labeled this difficulty the "Joseph Conrad phenomenon," after the famous English novelist who mastered the syntactical, lexical, semantical, and stylistic intricacies of English, his second language, but whose spoken English retained a Polish accent throughout his adult life in the English-speaking environment of London.[2] The Conrad phenomenon suggests that there is "a biolog-

(1) Christina Bratt Paulston and Mary Newton Bruder, *Teaching English as a Second Language: Techniques and Procedures* (Boston: Little, Brown, 1976), p. 81.

(2) Tom Scovel, "Foreign Accents, Language Acquisition and Cerebral Dominance," *Language Learning*, 19 (1969), 245-47.

ically determined period of life" when the phonology of a language can be acquired most easily and beyond which time this phonology is increasingly difficult to acquire.[3] Given a model and an incentive, pre-puberty-aged students can usually acquire an authentic native-like pronunciation.[4] However, applied linguists (and educational psychologists) have given neuro-muscular explanations of why persons beyond the age of puberty are not so successful: a neurological reason (the early lateralization of the brain);[5] an articulatory reason (the child's early conditioning of the several hundred muscles that are used in the articulation of speech);[6] and an auditory reason (reduced auditory discrimination which occurs after puberty).[7]

Recognizing the child's advantageous "neuro-muscular plasticity,"[8] applied linguists have concluded that authentic accentless speech is simply not an attainable goal for adult students.[9] Although second/foreign language students may learn conscious rules about pronunciation in the TL, Krashen and Terrell write, they "invariably 'fall back' on first language phonological competence, resulting in an 'accent.'"[10] Audio-lingual theorists of the 1950s and 1960s concluded that such "fall-back" results principally from differences in segmentals between the native language (NL) and the TL, usually termed as interference or divergent negative transfer.[11] Thus Politzer and Politzer write, "The main and perhaps ultimately the only reason why a non-native has any trouble pronouncing the sounds of a foreign language is

(3) H. Douglas Brown, *Principles of Language Learning and Teaching* (Englewood Cliffs, N.J.: Prentice-Hall, 1980), p. 46.

(4) J. Donald Bowen, "Contextualizing Pronunciation Practice in the ESOL Classroom," in *Teaching English as a Second or Foreign Language*, eds. Marianne Celce-Murcia and Lois McIntosh (Rowley, Mass.: Newbury House, 1978), p. 102.

(5) E. Lenneberg, *Biological Foundations of Language* (New York: J. Wiley, 1967), *passim*, suggests that lateralization is complete around puberty, but Stephen Krashen, "Lateralization, Language Learning, and the Critical Period: Some New Evidence," *Language Learning*, 23 (1973), 63-74, and Norman Geschwind, "The Organization of Language and the Brain," *Science*, 170 (1970), 940-44, suggest that lateralization takes place much earlier, around the age of five.

(6) Brown, pp. 48-49.

(7) Peter Strevens, *New Orientations in the Teaching of English* (Oxford: Oxford University Press, 1978), p. 82. See also John Lindholm, "The Use of Delayed Feedback in Learning Pronunciation of a Second Language," *IRAL*, 27 (1989), 236-39, whose experiments on the "ear mirror" show a "masking" in the adult of the child's external auditory feedback which enables the child "to compare the atmospheric results of his vocalization to those of native speakers" (237).

(8) Brown, p. 49.

(9) Paulston and Bruder, p. 82.

(10) Stephen D. Krashen and Tracy D. Terrell, *The Natural Approach: Language Acquisition in the Classroom* (Oxford: Pergamon Press, 1983), p.89.

(11) Elaine E. Tarone, "The Phonology of Interlanguage," in *Understanding Second and Foreign Language Learning: Issues and Approaches*, ed. Jack C. Richards (Rowley, Mass.: Newbury House, 1978), pp. 16-17.

that he has already acquired the sound system of his native language which interferes with the acquisition of new speech sounds and new sound patterns."[12]

For example, when the NL lacks one of the voiced-voiceless members, as Arabic does, since it has the /b/ phoneme but not the /p/ phoneme, the problem is "one of perception; students simply do not hear the difference."[13] Consequently, the student assigns English phonemes /b/ and /p/ to the Arabic phoneme /b/.[14] Lack of perception (the student cannot hear the sound) leads to inability of production (the student is unable to articulate the sound).[15] Audio-linguists contend that perfect TL pronunciation can be achieved through auditory and articulatory discrimination exercises geared to improved perception and production.[16]

However, to the dismay of audio-linguists, even after much in-class phonological contrastive analysis and drilling, out-of-class phonological fall-back continues to occur. For instance, an Arabic student learning English might be able to distinguish between /p/ and /b/ in *pebble* [pɛbəl] in a listening drill and produce both /p/s in *people* [pipəl] in a pronunciation exercise in class, but under certain circumstances outside of a controlled phonological environment, he might say *beople* [bipəl], *peoble* [pibəl], *beoble* [bibəl] or even *people [pip*əl]. The term "phonological variability" is used to designate this phenomenon where a TL learner uses a wide assortment of pronunciations of the same word. Thus studies on the phonological aspect of second language acquisition in the 1970s and 1980s have veered away from the contrastive analysis approach that all learner errors in pronunciation can be predicted by divergent negative transfer or NL interference.[17]

Instead, the concept of phonological variability is stressed. This concept suggests (1) that the TL learner develops a system of variable phonological rules and (2) that many operatives shape the phonology of TL learners, such as first language acquisition processes, overgeneralization, phonetic approximation, and avoidance.[18] Phonological studies by Nemser and W. Dickerson show that phonological

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(12) Robert L. Politzer and Frieda N. Politzer, *Teaching English as a Second Language* (Malabar, Fla.: Robert E. Krieger, 1981), p. 70.
(13) Paulston and Bruder, p. 90.
(14) Jonas N.A. Nartey, *An Introduction to Linguistics for Non-Native Speakers of English* (Tema: SAKUMO Books, 1988), p. 147.
(15) Wolfgang Klein, *Second Language Acquisition* (Cambridge: Cambridge University Press, 1986), p. 157.
(16) Politzer and Politzer, p. 86.
(17) Tarone, p. 17.
(18) Tarone, p. 25.

variability may also be determined by shifts in communication situations (whether free speaking, dialogue reading, word list reading, or spontaneous conversation) and speaker mood[19] (for instance, that at times TL speakers may deliberately "use their accent to identify themselves" as foreign learners of English, not as native speakers of English).[20]

Other studies suggest that phonetic variability may be determined by "the position of the sound in the sound sequence."[21] An early study by Brière on a group of American students' pronunciation of fourteen non-English sounds (from Arabic, French, and Vietnamese languages) showed that English rules for distribution of /3/ affected the students' ability to learn the sound in other syllable positions.[22] The major work in positional phonological variability has been done by Lonna and Wayne Dickerson, who have examined how phonological environment may determine success in production. Their studies of Japanese learners of English revealed that in distinguishing between the phonemes /z/ and /s/ beginning learners tended to produce more target variants in initial than in medial or final positions. However, there was a shift as these learners' study of English progressed; they began to show more target variations in medial positions, tending to substitute an /s/ for a /z/ in a medial position between an initial front vowel and a following high front vowel (for instance, [isi] for [izi] *easy*) or between an initial central vowel and a following high front vowel (for instance, [mjusik] for [mjuzik] *music*).[23]

Although I recognize that there are many operatives affecting the phonological competence of TL learners, in this study I set out to develop a method for testing pos-

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(19) W. Nemser, *An Experimental Study of Phonological Interference in the English of Hungarians* (Bloomington, Ind.: Indiana University Press, 1971), *passim*, and Wayne Dickerson, "Language Variation in Applied Linguistics," *ITL. Review of Applied Linguistics*, 35 (1977), 43-66.

(20) Tarone, p. 29, but cf. Krashen and Terrell: TL "speakers do not 'perform' their [phonological] competence because they do not feel comfortable using an authentic accent in the second language" (p. 89), and Alexander Z. Guivra, Robert C. L. Brannon and Cecilia Y. Dull, "Empathy and Second Language Learning," *Language Learning*, 22 (1972), 111-30, for their concept of "language ego" or the identity a person develops in reference to the language he speaks.

(21) Klein, p. 159.

(22) Eugene Brière, "An Investigation of Phonological Interference," *Language*, 42 (1966), 768-96.

(23) Lonna Dickerson, "Internal and External Patterning of Phonological Variability in the Speech of Japanese Learners of English," Ph.D. dissertation, University of Illinois, 1974; Lonna Dickerson, "The Learner's Interlanguage as a System of Variable Rules," *TESOL Quarterly*, 9 (1975), 401-408; Wayne Dickerson, "The Psycholinguistic Unity of Language Learning and Language Change," *Language Learning*, 26 (1976), 215-31; Lonna Dickerson and Wayne Dickerson, "Interlanguage Phonology: Current Research and Future Directions," in *The Notions of Simplification, Interlanguages and Pidgins*, eds. S.P. Corder and E. Roulet (Neuchatel: Faculté des Lettres, 1977), pp. 18-30, and Wayne Dickerson's article from *ITL* cited previously.

ition discrimination of /p/ and /b/ ability by Arabic EFL learners at various stages. The hypothesis of this study is that there is a systematic relationship between position and production of the /p/ and /b/ phonemes. Specifically, the study set out to answer the following three questions:

1. Will the incidence of the substitution of the NL /b/ for the TL /p/ be greater at the initial, medial or final position, and will there be a correlation at each position between the substitution and the preceding or following vowel or consonant?

2. Will the incidences of error decline at the ascending levels of English study?

3. Will there be instances where students manifest TL phonological hypercorrection — using the TL /p/ where there should be the NL /b/?

Methodology

Evaluation Measures

The evaluation instrument used to assess students' performance was designed in such a way as to disguise from students that they were being measured on their ability to produce correctly the phoneme /p/ and particularly to distinguish between /p/ and /b/. [Such manipulation is often crucial in phonological studies; for instance, Thakerar, Giles, and Cheshire in assessing speech accommodation used a "manipulation induced to create perceived differences in their [subjects'] status relevant skills,"(24) and Zuengler in studying phonological input in NS-NNS (native speakers - non-native speakers') interactions led her subjects to believe that they were either relative non-experts or experts on art.](25) Thus, in each of the three subtests (See Appendix A), it was hoped that students would believe (although the instructions never stated this) they were being tested on grammar, reading comprehension, and spontaneous response. This diversion was felt to be essential since all of the Arabic subjects have "learned" that there is a perceptive distinction between /p/ and /b/ and they can make this distinction when formally asked to.

This study hoped to distinguish between artificial perception and production and natural perception and production. It was felt that if the test focused the stu-

(24) J.N. Thakerar, H. Giles, and J. Cheshire, "Psychological and Linguistic Parameters of Speech Accommodation Theory," in *Advances in the Social Psychology of Language* (Cambridge: Cambridge University Press, 1982), p. 221.

(25) Jane Zuengler, "Phonological Aspects of Input in NS-NNS Interactions," in *Input in Second Language Acquisition*, eds. Susan M. Gass and Carolyn G. Madden (Cambridge, Mass.: Newbury House, 1985), p. 202.

dents' attention on some other component of English, the results would be more naturally indicative. Furthermore, the threefold test format of sentence reading, paragraph reading, and free response was designed to produce a variety of communication situations. This format was considered as preferable to a totally free-response conversation because the latter might raise the students' "affective filter,"(26) from which tension students more often tend to lapse into NL phonetic equivalents. (That not all tension was reduced by the format used is shown by the following: Although each student was told beforehand that this test was merely a Department of English survey, fourteen of the forty students, before the test began or after the test had ended, asked how their performance would affect their standing in the department, their grades, or their promotion to the next level, or they asked if their teachers would get copies of the results or if they would get the results).

The test consisted of three parts. (For the instructions to students, see Appendix A). In Subtest One students were given a sheet of paper containing ten sentences, in each of which there was a blank followed by two words in parentheses. After two minutes of study, each student was asked to read the sentences aloud, reading only the choices he had made from the options in parentheses. Spaces left blank involved use of verbs, nouns, pronouns, verbals, connectives and adverbs. Thus, it was hoped that students would perceive Subtest One as a grammar test. However, what had been done in drafting the sentences was to include six words where /p/ is used initially before a consonant; eleven places where /p/ is used initially before a vowel; two places where /p/ is used medially before a consonant; eight places where /p/ is used medially before a vowel; two places where /p/ is used finally before a consonant; five places where /p/ is used finally after a vowel; and two places where /p/ is used finally after a consonant. Eleven words contained the /b/ phoneme.

In Subtest Two, students were given a paragraph to read silently. They were told to remember as much of it as they could. After two minutes, each read the paragraph into the microphone. It was hoped that the student would believe he was being tested on his ability to remember what he had read. Actually, what was being measured was his ability to produce the /p/ phoneme initially before a consonant (seven instances), initially before a vowel (six instances), medially before a vowel (four instances), finally before a consonant (one instance) and to distinguish between /p/ and /b/ since the /b/ phoneme occurred 23 times.

(26) See Krashen and Terrell, pp. 19-20: "There are affective prerequisites to acquisition .... Briefly, the acquirer has to be 'open' to the input in order to fully utilize it for acquisition. According to research, factors that contribute to a low affective filter include positive orientation to speakers of the language, acquiring in a low anxiety situation, and at least some degree of acquirer self-confidence."

Subtest Three consisted of five questions based on the reading. These questions were given orally. Each question could have been answered in one to three words, most of which involved /p/ /b/ words. However, most students gave full sentence answers in their free responses, and of course were not interrupted. While my model called for seven /p/ and /b/ words here, in actuality an average of eleven were used in the responses.

Thus, in the total test, there were minimally 95 places where the student had to use /p/ or /b/: 57 involving /p/ and 38 involving /b/. However, because of the free response (Subtest Three), the actual average productive number was 99 places (58 with /p/ and 41 with /b/). The test was also drafted to allow for overlapping *p/b* words. Thus *people* occurs in Subtests One and Two and unexpectedly was used in three, and *please* in Subtest One occurs as the *pleasant* and *pleasing* variants in Subtest Two Words are particularly repeated in the reading passage section (Subtest Two) and were available as answers in Subtest Three: These include *berries* (repeated six times); *bush* (repeated four times); *picked* (two times); *Ethiopia* (two times); and *Arab/Arabia/Arabian* (five times). These repetitions were partly dictated by the reading passage, selected from a secondary-school reading book in the *Saudi Arabian English* series, but at places I increased the repetitions to see if students might pronounce the word correctly in one place but incorrectly in another, thus suggesting that phonological variability does occur with the same word.

Subjects

Forty subjects from the Department of English, College of Education, King Saud University, Abha Branch, were used in the study. Ten had just begun their English major; ten had just begun their second year in the program; ten, their third year; and ten, their fourth year. The subjects ranged in age from 18 to 26 and were selected randomly by student number. Subject responses were recorded in the Phonetics Laboratory of the Department using a UHER 4000 REPORT IC machine. I listened to the tapes through JVC HP-1100 headphones and recorded my findings, using the IPA. Then I asked a native-English speaker, an American professor of English in our department, to listen to the tapes through the same set of headphones and record his findings. Correlation of the two revealed that there was a .94 inter-rater reliability in Subtest One, .91 in Subtest Two, and .87 in Subtest Three where free response sometimes resulted in mumbling. The correlations indicate that the raters' judgements were similar to one another. In the few areas of disagreement, the two raters listened to those relevant portions of the tapes together and came to a consensus on whether a [p] or [b] sound was produced.

Analysis of Results

My hypothesis predicted that the position of the /p/ and /b/, whether initially, medially, or finally, would be a factor in determining the correct production of the /p/ or the /b/. Table 1 shows the data collected concerning the incidence and percentage of errors where /b/ was substituted for /p/ by position and by groups.

Table 1. Incidence and percentage of /b/ substituted for /p/ errors by position and by group.

	Initial before consonant	**Initial before vowel**	**Medial before consonant**	**Medial before vowel**	**Prefinal before consonant**	**Final after vowel**	**Final after consonant**
1st year	19 errors 13.5%	41 errors 27.7%	4 errors 20%	37 errors 26.4%	16 errors 53.3%	5 errors 10%	0 error 0%
2nd year	17 errors 12.1%	38 errors 21.1%	3 errors 15%	24 errors 17.1%	11 errors 36.6%	1 error 2%	1 error 5%
3rd year	16 errors 11.4%	21 errors 11.6%	1 error 5%	18 errors 12.8%	10 errors 33.3%	1 error 2%	1 error 5%
4th year	11 errors 7.8%	14 errors 7.7%	1 error 5%	10 errors 7.1%	5 errors 16.6%	0 error 0%	0 error 0%
	14 possible errors involving *p* only × 10 students = 140 poss. errors	18 possible errors involving *p* only × 10 students = 180 poss. errors	2 possible errors involving *p* only × 10 students = 20 poss. errors	14 possible errors involving *p* only × 10 students = 140 poss. errors	3 possible errors involving *p* only × 10 students = 30 poss. errors	5 possible errors involving *p* only × 10 students = 50 poss. errors	2 possible errors involving *p* only × 10 students = 20 poss. errors

This data will now be analyzed by position and vowel-consonant/consonant-vowel clusters.

(1) Initial Position

Beginning students had greater difficulty pronouncing [p] intially before a vowel than before a consonant. Since the [p] sound can occur initially only before the consonants [r] and [l], I included eight instances of [pr]-words and 6 instances of [pl]-words in the tests to determine if the succeeding consonant might be a determining factor. Twenty-five of the forty students manifested at least one instance where they

pronounced a [pr]-word, such a *price* or *prior*, with a [b]. Only five of the students mispronounced a [pl]-word, such as *please* or *planted*, with a [b].

No such pattern emerged from the use of [p] before vowels in the initial position, as Table 2 shows:

Table 2. Types of vowels in the initial position, and students (each designated by a number at each level) making at least one mispronunciation.

	[e]	[a]	[i]	[I]	[ə]	[U]	[ɔ]
4th	2 4	1	3 4	2 4		6	3 5
3rd	1 5	1 3	1 2	1	1 5 2 6 3	1	1 3
2nd	1 7 4 8 6	1 7 2 8 5	1 7 5 8 6	1 5 2 8	1 6 3 8 5 9	5 6	7 8
1st	1 4 2 8 3	1 5 2 8 3 9	2 7 4 8 5	1 6 2 8 5 9	3 8 5 9 6	8	1 5 2 8
	Total: 14 students	Total: 14 students	Total: 14 students	Total: 13 students	Total: 16 students	Total: 5 students	Total: 10 students

Thus, at the fourth level, Student One made at least one mispronunciation of [p] as [b] only before [a], and Student Two made at least one subsitution of [b] for [p] before [e] and [I]. At the third level, Student One pronounced [p] as [b] with all vowel forms. Student Two, only before [i] and [ə]. In the second-year group, Student Eight pronounced [p] as [b] before six of the seven vowel forms. In the first year, Student Eight in at least one instance pronounced [p] as [b] with all vowel forms. The table also reveals that six of the ten fourth-level subjects, six of the ten third-level subjects, nine of the ten second-level subjects, and nine of the ten first-level subjects had at least one instance where they substituted a [b] for a [p] before a vowel.

Of the thirty subjects who mispronounced the [p] before a vowel, sixteen substituted [b] before the schwa [ə]; fourteen before [e], [a], and [i]; thirteen before [I]; ten before [ɔ]; and five before [U]. However, variations are prevalent. For instance,

Students Two, Six and Seven (first level) pronounced *people* correctly in Subtest One, but as [bibəl] in Subtest Two. Student Five (first level) pronounced *people* as [bipəl] in Subtest One and [bibəl] in Subtest Two. Among the second-level subjects, Students Five, Six, and Eight pronounced *people* as [bibəl] in both subtests, but Student Seven pronounced it correctly in Subtest One and as [bibəl] in Subtest Two. Among third-level subjects, Student One pronounced *people* as [bibəl] in both subtests, but Student Two pronounced it as [bibəl] in Subtest One and correctly in Subtest Two. Among fourth-level subjects, Students Three and Four pronounced *people* as [bibəl] in Subtest One, but correctly in Subtest Two.

(2) Medial Position

A significant number of students had difficulty correctly pronouncing [p] medially before either a vowel or a consonant. Two *p* words before a consonant were used (*applaud* [əplɔd] and *appreciate* [əpriʃIeit]) and one *b* word (*librarian* [laibreriən]). Five of the seven subjects who made errors substituted [b] for [p] before the [r], a figure consistent with the findings in the initial position. Concerning vowels, eight of the fourteen instances involved a [p] before a [ə]: *people* (two times), *supper*, *ample*, *paper* (two times), *simple*, and *rapidly*. One instance (expensive [IkspɛnsIv]) involved a [p] before [ɛ]; one (*sports* [spɔrts]) before a [ɔ]; three instances (Ethiopia [iθiopia]) before [i]: and one instance (*preparing* [prIpærIŋ]) before [ae]. Six of the forty students pronounced *expensive* as [IksbɛnsIv]. No student pronounced *sports* as [sbɔrts]; three students pronounced *Ethiopia* with a [b]. Before the [ae] in *preparing*, fourteen students pronounced the medial *p* as a [b], ten of whom also pronounced the initial *p* as a [b]. Concerning the words where the [p] was followed by a schwa, twenty-three students had at least one instance where they pronounced the medial *p* as a [b], three at the fourth level, five at the third level, six at the second level, and nine at the first level.

(3) Final Position

The subjects at all levels had much difficulty correctly producing the /p/ phoneme when it was in a prefinal position before a consonant. Four of the ten fourth-level students pronounced *sipped* [sIpt] and/or *wiped* [waipt] as [sIbd] or [sIbəd] and [waibd] or [waibəd]. Six of the third-level students and six of the second-level students made these mispronunciations, one of whom at each level also pronounced *alps* [ælps] as [ælbz] or [ælbəz]. Nine of the ten first-level students mispronounced either or both *wiped* and *sipped*, one of whom also pronounced *alps* as [ælbz].

However, the subjects at all levels seldom substituted [b] for [p] in the final position, whether it came after a vowel or a consonant. No students at the fourth level incorrectly pronounced [b] for [p] in the words *lap, trip, group, cup, cheap, camp,* and *damp*. At the third level, only two students respectively produced [tʃib] (*cheap*) and [dæmb] (*damp*). At the second level, only one student produced [læb] (for *lap*). At the first level, four students incorrectly pronounced the *p*; two formed [læb] (for *lap*); one said [grub] (*group*); and the last student said (tʃib] *cheap* and [trIb] *trip*.

(4) Proficiency by Levels

As would be expected, the incidences of *p/b* error decline at the upper levels of English study. Table 3 shows the number of subjects at each level and the incidences of error made:

Table 3. Incidences of error by number and group.

	Number of errors subjects are making				
	No errors	1-5 errors	6-10 errors	11-15 errors	above 15 errors
1st year	0	1	3	3	3
2nd year	0	5	0	1	4
3rd Year	1	5	2	1	1
4th Year	2	5	2	1	0

The decline is significant between the first-and second-year students and gradual thereafter. While nine of the ten first-year students made six or more errors, only five second-year students showed such a high incidence. Of the third-year group, four made more than five errors, and of the fourth-year group, three made more than five errors. Table 1 also shows the significant improvement at the ascending levels in reference to the position of the /p/. While 53.3% final errors before a consonant were made by first-year students, this percentage declined steadily: 36.6% (second year), 33.3% (third year) and 16.6% (fourth year). Similar declines are seen with /p/ medially before vowels: from 26.4% (first year) to 7.1% (fourth year). In the initial position, the decline in /p/ errors before consonants is less dramatic, from 13.5% errors in first year, 12.1% (second), 11.4% (third) and 7.8% (fourth), although before vowels it is more prominent between the second-year students (21.1%) and third year (11.6%).

(5) Hypercorrection

Few subjects tended to hypercorrect by pronouncing the NL /b/ in words with a TL /p/ and then usually only before vowels initially. Only five subjects made this mistake three or more times. One first-level student (who had previously studied English abroad) made no mistakes of substituting a [b] for a [p], but he made seven mistakes (two quickly corrected) where he did the reverse: *paying* (for buying), *poys*, *peautiful*, *pend* (for bend), *push* (for bush), *purning*, and *peans*. No second-year student showed this reversal. Two third-year students showed this tendency. One pronounced buying as *paying*, bend as *pend*, berries as *perries* (throughout). This same student, however, used *brior*, *brickly*, *subber*, *exbensive*, *simble*, *rabidly*, *wibed*, and *sibbed*. The second third-level student pronounced *pirds*, *perries*, *push* (for bush), *peans*, *powl* (for bowl). These inconsistencies suggest that these two third-year students have not acquired a coherent *p/b* distinction in a non-controlled phonological environment. Among fourth-year students, two made the unexpected reversal. One of the students made no mistakes of substituting the NL /b/ for the TL /p/, but made nine mistakes substituting [p] for [b]: [pɔiz] (for boys,) [pɛriz] (for berries) (five of the six times), [pɪtə˞] (two times) and [træʃpɪn]. The other 32 [b]-sounds that he used he pronounced correctly. The second fourth-level student made only four mistakes in the three tests, all involving substituting a [p] in a *b* word before a vowel: [pɛnd], [pɪtə], and [pɛriz] (two times).

Conclusions

Given the small size of the group tested, caution must be taken not to overstate the implications of the findings listed above, but some predictive relationships do emerge from this study:

1. Beginning Arabic EFL learners (first- or second-level subjects) have minimal problems with the /p/ phoneme in the final position where there is either a preceding vowel or consonant and in the initial position where the /p/ precedes a consonant (both under 15% incidences of error).

2. These beginning Arabic EFL learners have significant problems with the /p/ phoneme in the initial position where the /p/ precedes either a vowel or a consonant, or the prefinal position where the /p/ is the first element of a two-part consonant cluster (all 20% or above incidences of error).

3. Subjects at the higher levels (third- and fourth-year students) exhibit steady and significant decreases in error with the /p/ phoneme at the medial position, the

prefinal position, and the initial position where /p/ occurs before a vowel (the mean decline is about 14%). However, the decrease in errors is less significant at the initial position where /p/ occurs before a consonant (the decline is under 5%).

4. Phonetically, position seems to be an important determiner in consonant clusters. Few of the subjects manifested problems when [p] occurs finally — even when it is preceded by a consonant, as in *camp*. However, in final clusters where [p] is followed by another consonant, as in *sipped* ([pt]) or *Alps* ([ps]), twenty-five of the forty subjects made at least one mistake in pronouncing this consonant-cluster pattern. A possible explanation is that subjects have not yet learned to handle voiceless consonant clusters, which occur in Arabic infrequently. (Note: the voiced consonant-cluster cognate of [pt] may occur in Arabic as in the proper name *Abd*. Thus, English clusters with a minimum of one voiced member do not seem to be a problem for Arabic EFL learners. The problem is with voiceless consonant clusters.) A second explanation might take into consideration the possible effect of regressive assimilation. For example, the past *-ed* could have been responsible for causing /p/ to be pronounced as /b/, since students might have been affected by the letter *d*.

For the medial position, the consistent substitution of [b] for [p] may be due to a number of factors, including NL interference. The most promising explanation is the universal tendency of languages to either weaken and/or produce voiced intervocalic consonants. For example, English /t/ → [D], and Spanish /b/ → [ß], both at the intervocalic medial position (Jonas Nartey, personal communication).[27] In the initial and medial positions, the [pr]-consonant cluster produced significantly more mistakes when contrasted with the [pl]-cluster. This phenomenon might be explained by the fact that the [r] sound in Arabic is often trilled and thus is not always identical to the approximant [r] sound in English. Thus, the subjects were confronted with a new phoneme followed by a new allophone.

5. Some subjects tended to pronounce the /p/ in a word, such as *people*, correctly in one subtest and the same word incorrectly in another subtest or correctly at one place in a subtest and incorrectly at another place. These findings support not only the concept of phonological variability, but also Nemser's and W. Dickerson's findings cited earlier that the type of communication situation and the student's mood affect phonological variability.

(27) Dr. Nartey was coordinator of the phonetics/linguistics section of the Department of English, King Saud University-Abha and Director of the Department's Phonetics Lab. His findings on voiced and voiceless stops are contained in his *A Study in Phonemic Universals – Especially Concerning Fricatives and Stops*, UCLA Working Papers in Phonetics, No.46 (Los Angeles: University of California Press, 1979), 16-29.

6. While some contrastive analysts have recognized the importance of phonological distribution and sequence, most have held that phonological interference or divergent negative transfer is the principal reason a non-native has problems pronouncing the sounds of a TL. My study suggests that the position of the phoneme, not just its absence in the NL, is a variable which shapes the phonology of TL learners.

7. There is little support for Purcell and Suter's contentions that formal classroom training in pronunciation does not relate to pronunciation ability and thus is of limited use.(28) The subjects in my study receive formal courses in pronunciation, linguistics, phonology, and phonetics at the end of their second year and during their third year. There is some decline in the incidences of error from the first-year group to the second-year group (the two groups which had not received formal classroom phonetic training), and this drop would substantiate Purcell and Suter's contention. However, the data of my study show that before commencing this formal phonetic study, students were still making around 15% errors in the initial and medial positions, 36% in the final consonant-cluster position, and 5% in the final position. After they had completed their formal phonological study, the percentages of error drop respectively to 7.7%, 5.5%, 16.6%, and 0%. Certainly, the factors which Purcell and Suter mention as correlating with accuracy in pronunciation — phonological processes in the acquirers' NL, the amount of interaction with native speakers of English, and concern by TL learners about their accent — are important, but the data of my study suggest that classwork in articulatory phonetics is also important and that the movement to emancipate pronunciation from the dictates of phonetic analysis (as in Kenworthy's recent book *Teaching English Pronunciation)*(29) may be precipitous.

In 1978, Tarone wrote that contemporary theories of second language acquisition have not adequately addressed themselves to phonology and that "studies on interlanguage phonology have been sparse."(30) In 1985, Zuengler was still sounding the call for studies that look "at the phonological aspects of the interlocutors's speech," noting that "there is an obvious need to conduct more research on the phonology of input."(31) I hope that this study will encourage other researchers in the

(28) E. Purcell and R. Suter, "Predictors of Phonological Accuracy: Reexamination," *Language Learning*, 30 (1980), 271-87. See also Edith H. Madden, "The Effects of Training on Pronunciation," *ORETESOL Journal*, 4 (1983), 69-80, which concludes that improvement in TL pronunciation occurs over time, but not necessarily as a result of formal training.

(29) J oanne Kenworthy, *Teaching English Pronunciation* (London: Longman, 1987), *passim*.

(30) Tarone, p. 16.

(31) Zuengler, p. 197.

Arab world to explore the relationship between position and production concerning not just /p, b/ phonemes, but all others with which Arabic learners of English have problems.

Appendix A: Test

Instructions

Preliminary to the test, each student was thanked for taking part in "this survey being done by the Department in which the Department is seeking to get voice records of some of its students." Then the student answered questions about his name, student number, and level (1st, 2nd, 3rd, 4th year).

Subtest One: Sentence Reading

Instructions

"In the first part of this survey, you will be given a sheet of paper which contains ten sentences. Each sentence has a blank; after the blank are two words in parentheses. Select the one word which best fits into the blank. You will be given two minutes to read over the sentences and make your choices. Then you are to read the sentences aloud into the microphone, reading only the choices you have made from the options in parentheses."

1. He _____ (see, saw) some *p*eo*p*le *b*uying some chea*p* clothes yesterday.
2. I *p*refer talking to _____ (those, them) *b*oys, but not while they are having su*pp*er.
3. That was a very *b*eautiful cam*p* in the Al*p*s to _____ (visit, visited), but there were not am*p*le *p*arking *p*laces.
4. He wants a new car, but he _____ (doesn't, don't) want to *p*ay the ex*p*ensive *p*rice of a new car.
5. After running a la*p* around the field, he wi*p*ed his dam*p* face with a *p*iece of *p*a*p*er; _____ (then, so) he *p*ut the *p*a*p*er in the trash*b*in.
6. I love to *p*lay foot*b*all at my sports clu*b*, but I _____ (also, too) know that I have to study my school *b*ooks.
7. "*P*lease _____ (doesn't, don't) *b*end the *p*ages in that *b*ook," the li*b*rarian said.
8. That test was sim*p*le; he *b*elieved he got a *p*erfect _____ (mark, marks); his *p*arents _____ (will, could) a*pp*laud his achievement.
9. During the tri*p* with his grou*p* as he was ra*p*idly walking through the field, he _____ (was seeing, saw) some *p*retty *b*irds.
10. He told his friend he would a*pp*reciate his *p*ouring him a cu*p* of tea _____ (although, since) he was thirsty.

Subtest Two: Paragraph Reading

Instructions

"I will now give you a paragraph about Arabic coffee to read silently. You will have two minutes to read it. Remember as much as you can because I will ask you some comprehension questions about it."

After two minutes, these instructions were given: "Now I want you to read the paragraph again, this time out loud. Again remember as much as you can because I will ask you some comprehension questions."

Arabic Coffee

Nobody is sure how the Arabs took up drinking coffee. We know that prior to its introduction in the Arabian Peninsula, it grew only in Ethiopia in Africa. One story says that an Arab visitor in Ethiopia saw some goats eating berries from a prickly bush. After eating the berries, the goats became very pert and lively. The Arab traveller picked some of the berries from another bush. He tasted them and found them very bitter. He took them home and heated them in a pot full of water. He sipped at the liquid and found it pleasant; so that man planted some of the berries. Later, people preferred the coffee beans cooked. They also began to grind the cooked beans before preparing the coffee. Another story says that a traveller saw a bush burning. As the fire burned up the berries on the bush, the man noticed a pleasing smell. He picked and ate the berries.

Subtest Three: Questions on Comprehension

Instructions

"Please answer the following questions based on the paragraph you read."

1. Where did coffee grow before its introduction in the Arabian Peninsula?
2. According to one story, what did an Arab visitor to Ethiopia see a goat eating?
3. The Arab visitor tasted the berries. How did they taste — bitter or sweet?
4. He took the berries home and heated them in what?
5. In another story, an Arab traveller saw what burning?

تغير الصوتين اللغويين (/b/و /p/) حسب موقعهما في حديث دارسي اللغة الإنجليزية للناطقين باللغة العربية

علي بن يحيى محمد العريشي

أستاذ مشارك، قسم اللغة الإنجليزية، كلية التربية، جامعة الملك سعود، فرع أبها، أبها، المملكة العربية السعودية

ملخص البحث. تلخص هذه المقالة النتائج التي تم التوصل إليها إثر تجربة أجريت لقياس العلاقة بين موقع الصوتين اللغويين /p/ ، /b/ وتغير لفظهما في حديث دارسي اللغة الإنجليزية في المراحل المتقدمة في المملكة العربية السعودية.

يذهب المحللون في اللغويات التقابلية إلى أن دارسي اللغة الإنجليزية الناطقين بالعربية يستبدلون الصوت اللغوي /b/ بالصوت اللغوي /p/ بانتظام وثبات، وبغض النظر عن اختلاف الموقع، ما لم يتم توجيه نظرهم إلى اللفظ الصحيح، وذلك، كما يزعمون، لغياب الصوت اللغوي /p/ من اللغة العربية. بينما ترى الدراسات الحديثة في اكتساب اللغة الثانية وجود متغيرات أخرى تؤثر في لفظ الأصوات اللغوية في لغة الهدف. ومن هذه المتغيرات موقع الصوت اللغوي في المقطع الملفوظ: أهو في أوله، أم في منتصفه، أم في نهايته.

وتؤكد نتائج هذه الدراسة أهمية موقع الصوت اللغوي بصفته عاملاً محددًا للقدرة الصوتية، إذ وجد أن الدارسين الذين تم إخضاعهم للتجربة لا يعانون من صعوبات تذكر إذا ورد الصوت اللغوي /p/ في نهاية المقطع، مهما تباينت مستوياتهم الدراسية، بينما وصلت الصعوبات إلى أقصاها لدى الدارسين المبتدئين إذا ورد هذا الصوت اللغوي في منتصف المقطع قبل صوت صامت أو صوت صائت، أو إذا ورد في أول المقطع قبل صوت صائت. وتلاشت هذه الصعوبات بشكل ملحوظ لدى الدارسين في المستويات المتقدمة. أما في حالة الصوت اللغوي /p/ في أول المقطع الملفوظ قبل صوت صامت، فقط أظهر الدارسون المبتدئون قدرًا ضئيلاً نسبيًّا من الصعوبات التي بدأت في الاختفاء تدريجيًّا كلما تقدم الدارسون في مستواهم الدراسي.