

English Translation Department

Fourth Year

Comparative Linguistics

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2.1 INTRODUCTION

Phonology is the study of the sound system of a particular language. Phonetics, in contrast, is the study of the articulatory, auditory and acoustic properties of speech-sounds. Phonology subsumes the study of the segmental phonemes of a language (consonants and vowels) and the suprasegmental features that are superimposed on the segmental phonemes. These features are length, stress, and rhythm. This lecture deals with the phonological systems of both English and Arabic. It is organized as follows: Section 2 presents a description of the English and Arabic consonants. Section 3 presents a description of the vowels and diphthongs of the two languages.

2.2 CONSONANTS

Consonants are usually described in terms of the manner of articulation, place of articulation, and voicing. Throughout the description of the English and Arabic, consonant emphasis will be placed on those phonetic and phonological features that are specific to each of the two languages.

2.2.1 English Consonants

English has twenty-four consonants. Table 1 presents these consonants defined in terms of place and manner of articulation.

Table I: English Consonants

	B	LD	I	A	P	V	G
Plosive	p			t		k	
	b			d		g	
Affricate					tʃ		
					dʒ		
Fricative		f	θ	s	ʃ		h
		v	ð	z	ʒ		
Nasals	m			n		ŋ	
Liquids				l, r			
Glides	w				y		

B: bilabial, LD: labio-dental, I: interdental, A: alveolar, P: palatal, V: velar, G: glottal

The following are some of the features that are specific to the pronunciation of English consonants.

(a) Aspiration

English voiceless stops /p, t, k/ are aspirated when they occur word-initially in stressed syllables. Aspiration refers to the puff of air/breath that occurs between the release of the stop and the production of the following vowel, e.g., **pen** /pen/, **ten** /ten/ and **kin** /kin/. Aspiration is neutralized when the sibilant /s/ precedes the voiceless stop in syllable initial position, e.g., **step** /step/. However, in syllable-final position these voiceless stops are unreleased and unaspirated.

(b) Syllabic consonants

A syllabic consonant is one that forms a syllable by itself, i.e., without a vowel. English has three syllabic consonants /l/, /n/ and /m/ that occur finally in a word. For example:

little /litl/ sudden /sʌdn/ bottom /bɒtm/

The syllabic lateral and nasal consonants in the above words are pronounced with lateral and nasal plosive respectively. The former means that the stop sound is released by the lowering the side of the tongue, whereas the latter means that the stop is released by lowering the soft palate so that the air escapes through the nose.

(c) r-deletion

The consonant /r/ is not pronounced in British English when it occurs word finally or in a sequence of two final consonants as in the following examples:

far /fa:./, **card** /ka:d/

But, word-final /r/ is pronounced when the next word begins with a vowel as in the phrase ‘more and more’. This /r/ is referred to as "linking" /r/.

In American English; however, the consonant /r/ is pronounced in the above contexts. Moreover, speakers of American English distinguish between the pronunciation of “heart” and “hot” by producing /r/ in the former word but not in the latter. Speakers of British English, in contrast, distinguish between the two words by vowel quality.

(d) /t/, /d/

In American English /t/ and /d/ change into a flap /D/ when they occur after a stressed vowel as in “latter” and “ladder”.

(e) /l/

English /l/ has two allophones: clear and dark. The former occurs before vowels, as in **leaf**, while the latter, which is velarised, occurs at the end of a word or before a consonant as in **feel** and **field**. Clear /l/ is produced with the front of the tongue raised, while dark /l/ is produced with the back of the tongue raised. Devoiced /l/ is the third allophone. It occurs when preceded by /p/ or /k/ in a stressed syllable as in **play**, **climb**.

2.2.2 Arabic Consonants

Arabic has twenty-eight consonants. Table 2 presents these consonants in terms of place and manner of articulation.

Table 2: Arabic Consonants

	L	LD	I	D	A	P	V	U	Ph	G
Plosives	b			t, ṭ d, ḍ			k	q		ʔ
Affricates						j				
Fricatives		f	θ ð	s, ṣ		š	x ç		ħ ʕ	h
Liquids										
Trill					r					
Lateral					l					
Nasal	m				n					
Glides	w					y				

Key: L: labial, LD: labiodental, I: Interdental, D: Dental, A: Alveolar, P: Palatal, V: Velar, U: Uvular, Ph: Pharyngeal, G: Glottal

Among the features specific to the pronunciation of Arabic consonants are: **emphatic vs. non-emphatic sounds, gemination, glottal stop, back consonants, and /r/.**

(a) Emphatic vs. non-emphatic consonants

Arabic has four pairs of consonants that are distinguished by tafkhiim تفخيم 'emphasis'. They are: /t, ṭ /, /d, ḍ /, /s, ṣ /, /ð, ḍ /.

/t/ as in taaba تاب 'he repented'

/ṭ/ as in ṭaaba طاب 'he recovered'

/d/ as in dalla دَلَّ 'he directed'

/ḍ/ as in ḍalla ضَلَّ 'he went astray'

/s/ as in sayf سيف 'sword'

/ṣ/ as in ṣayf صيف 'summer'

/ð/ as in ðalla ذَلَّ 'he became despised'

/ḍ/ as in ḍalla ظَلَّ 'he remained'

(Emphasis is marked by a dot underneath the consonant.)

The production of emphatic consonants is characterized by contraction of the muscles of the pharynx, raising of the back part of the tongue towards the palate and protrusion of the lips. Besides these four pairs, emphatic /l/ may occur in a very restricted context. Emphatic /l/ occurs only in the divine name **اللّٰه** *allāh*. The following pair of words shows the emphatic vs non-emphatic /l/:

- * **wallāahu** واللّٰهُ 'and God',
- * **wallaahu** ولأه 'he appointed him governor'

In connected speech, the pronunciation of emphatic /l/ is conditioned by the type of vowel that precedes it. For example, emphatic /l/ occurs when preceded by /u/ and /a/, whereas non-emphatic /l/ occurs after /i/. The following examples illustrate these conditions.

- * **laa ʔilaaha ʔillaa llāah** لا إله إلا الله
'There is no deity but God'.
- * **rahmatu llāahi** رحمة الله عليه
'May God bless him.'
- * **bismi llaah** بسم الله
'In the name of God.'

(b) Gemination

Consonants occur single or doubled (geminated). A sequence of two identical consonants is described as gemination *tashdiid* تشديد 'strengthening'. The geminate consonants are long. This consonantal length is phonemic in Arabic as shown in the following minimal pair.

- * **kataba** كَتَبَ 'he wrote',
- **kattaba** كَتَّبَ 'he made (someone) write'

It should be noted that geminate consonants may occur medially and finally. For example:

- * **madda** مَدَّ he stretched.
- * **sadd** سَدَّ a dam

(c) The Glottal Stop al-hamza الهمزة

The Arabic phonemic glottal stop occurs in initial, medial and final positions in a word. For example:

- * **ʔabb** أب 'father',

- * sa²ala سأل he asked
- * samaa² سماء 'sky' su²aal سؤال 'question' mi²a-a مئة 'a hundred'

It also occurs as a geminate, as in

- * tara^{??}asa ترأس 'he headed'

We should note that although the hamza همزة is a fully functioning phoneme, it is not an orthographically independent letter.

(d) Back Consonants

Arabic has six back consonants, four fricatives and two stops. They are:

- * Velars: /x, g/
- * Pharyngeals: /ħ, ʕ/
- * Glottals: /h, ʔ/

Since the glottal stop has been described earlier, we will only describe here the other five guttural consonants.

(i) Velar fricatives /x/ and /g/

Velar consonants are articulated with the back of the tongue almost touching the soft palate (velum). The following minimal pairs represent the voiceless and voiced velar fricative.

- /x/ xadd خذ 'cheek' /g/ gad غد 'tomorrow'
- xaalii خالي 'my uncle' gaalii غالي 'expensive'

(ii) Pharyngeal Fricatives /ħ/ and /ʕ/

Pharyngeal articulation occurs in the pharynx. In the production of these pharyngeal sounds, the muscles in the pharynx are tensed up. For the voiceless /ħ/, this produces a very strong fricative. Voiced /ʕ/ is not accompanied by much friction. The following minimal pairs represent the voiceless and voiced pharyngeal.

- /ħ/ ħaddada حَدَّدَ 'he specified' /ʕ/ ʕaddada عَدَّدَ 'he enumerated'
- /ħ/ baaha باح 'he revealed' /ʕ/ baaʕa باع 'he sold'

(iii) Glottal Fricative /h/

Glottal articulation occurs in the larynx. The voiceless glottal fricative /h/ is always pronounced, whether it occurs in initial, medial or final position, e.g.,

- * word-initial: huwa هو 'he', hunaa هنا 'here'
- * word-medial: qahwa قهوة 'coffee', qahr قهر 'oppression'
- * word-final: miyaah مياه 'water', safiih سفیه 'silly'

(e) /r/

The Arabic /r/ sound is produced by tapping the tip of the tongue against the alveolar. It is always pronounced, i.e., initially, medially and finally.

- * word-initial: ra²s رأس 'head', ramaa رمى 'he threw'
- * word-medial: bard برد 'cold', ²ard أرض 'earth'
- * word-final: naar نار 'fire', mahr مهر 'dowry'

This consonant is trilled when it is geminated; e.g., qarrara قرر 'he decided'

CONTRAST

Having described the inventory of consonants in English and Arabic, we will now highlight the contrasts that hold between the two inventories.

First, the following English consonants have no counterparts in Arabic: /p, v, g, ʒ, dʒ,/. Although /p/ does not occur in Classical Arabic, /b/ is devoiced before a voiceless consonant, as in:

- * **habs** **haps** حبس 'prison'
- * **kabt** **kapt** كبت 'suppression'

Similarly, /v/ does not occur in CA, but it occurs in the word **hivz** حفظ 'learning by heart' (instead of hifz حفظ).

Second, the following Arabic consonants have no counterparts in English:

/t̤, d̤, ð, ʂ, x, ɣ, q, h/.

Third, the English flap /r/ is only pronounced word-initially, e.g., **ride**. In

British English, it is silent in medial and final positions. e.g., farm /**fa:m**/ and far /fa:/. In contrast, the Arabic trill /r/ is pronounced in all contexts.

Fourth, gemination is phonemic in Arabic but not in English.

2.3 VOWELS AND DIPHTHONGS

Consonants are described in terms of manner and place of articulation, whereas vowels are described in terms of the position of the tongue and the shape of the lips. Three parameters are important for the description of vowels: vertical tongue position (high, mid and low), horizontal tongue position (front, central and back) and lip shape (spread, neutral and rounded). A diphthong is a sequence of vowel plus glide within the same syllable. In other words, its production involves a transition from a vowel to a glide.

2.3.1 English Vowels and Diphthongs

English has twelve vowel phonemes, shown in Table 3.

Table 3: English Vowels

	Front	Central	Back
High	I: (beat) I (bit)		u: (boot) U (put)
Mid	e (bet) ɜ: (bird)	ə (alone) ʌ (but)	ɒ (hot) ɔ: (bought)
Low	æ (pat)		a: (father)

The schwa /ə/ occurs in unstressed syllables and is the most frequently used vowel. It usually substitutes for any unstressed vowel.

Long vowels occur in English, but vocalic length is not phonemic. For example, the vowel in the word **bead** is relatively longer than the one in the word **beat**. This feature of relative length is determined by the voicing of the following consonant. In general, a vowel is longer when it is followed by a voiced consonant than by a voiceless one. However, relative length is not the feature that distinguishes these two words. They are distinguished by the different final consonants /d/ and /t/.

Besides the lengthening of vowels before voiced consonants, vowels are nasalised before nasal consonants, as in **seen**, **soon** and **sing**.

Besides the twelve vowels, English has eight diphthongs. They are:

/aɪ/ as in right /raɪt/

/ɔɪ/ as in boy /bɔɪ/

/eɪ/ as in play /pleɪ/

/əʊ/ as in go /gəʊ/

/aʊ/ as in now /naʊ/

/eə/ as in care /keə/

/ɪə/ as in here /hɪə/

/ʊə/ as in sure /ʃʊə/

2.3.2 Arabic Vowels and Diphthongs

(a) Phonemes

Arabic has a triangular vowel system that consists of three pairs of short and long vowel phonemes as shown in Table 4. (Vowel length is indicated by writing the vowel twice.)

Table 4: Arabic Vowels

	Front	Central	Back
High	ii i		uu u
low		aa a	

Vocalic length in Arabic is phonemic, that is, pairs of words may be semantically distinguished by vocalic length. The following minimal pairs show the contrast between short and long vowels.

/i/ vs. /ii/: sin سن 'tooth' and siin سين 'the letters'

/a/ vs. /aa/: kataba كتب 'he wrote' and kaataba كاتب 'he corresponded with'

/u/ vs. /uu/: ʕud عُد 'come back' and ʕuud عود 'lute'

NOTE: A distinguishing feature of Arabic vowels is madd مَدّ 'length', which is similar to consonantal length, i.e., gemination. The long vowels are referred to as ḥuruufu l-madd حروف المد 'the letters of prolongation'. They are al-'alif الألف 'the /aa/', al-waaw الواو 'the /uu/', and al-yaa' الياء 'the /ii/'. They are twice the length of the short counterparts.

Arabic also has two diphthongs. They are:

/aw/ أو as in yawm يوم 'day' and 'aw أو 'or'

/ay/ أي as in **dayn** دين 'debt' and '**ayy** أي 'which'

The Arabic vowels never occur initially. If they do, they are preceded by the glottal stop 'hamza هَمْزَة ʔ.

Examples: ʔana أنا 'I', ʔamal أمل 'hope', ʔinsaana إنسان 'a human being'

CONTRAST

The preceding presentation of English and Arabic vowel systems reveals the following differences. First, the English vowel system is more elaborated than the Arabic vowel system. That is, English has more variation in phonemic vowel quality than Arabic does. Therefore, it is predicted that Arab learners of English will experience some difficulty in producing some of the English vowels, especially the mid vowels, which are non-existent in Arabic.

Second, the following English vowels have no counterparts in Arabic /e, ə, ɔ:, ʌ, ɜ:, ɒ, əʊ/. Arab learners of English, therefore, are expected to make erroneous substitutions. For example, they will tend to produce **sit** and **set** as /sit/, and **coat** and **caught** as /kɔ:t/.

Third, unlike Arabic vowels, English ones are lengthened before voiced consonants and nasalised before nasal consonants.

Fourth, the English schwa /ə/ in connected speech commonly replaces an unstressed vowel. For example, the vowels in function words are usually unstressed and are reduced to a schwa, such as **of** əv/ in 'the name of the game' and **to** /tə/ in 'to study'. Arabic vowels are never shirred over in this way; they maintain their characteristic quality. It is, therefore, predicted that Arab learners of English will tend to produce the original vowel in these function words rather than the schwa.

Fifth, English orthography sometimes does not reflect the correct pronunciation of the vowels. For example, the double -oo- in the words **foot** and **fool** is pronounced differently, that is, it is pronounced open and short in the first but close and long in the second. This non-correspondence or disparity between spelling and pronunciation does not occur in Arabic except in the assimilated /l/ sound of the article, as in **ash-shams** الشمس 'the sun'. Therefore, it is predicted that Arab learners of English will tend to produce a long vowel whenever they come across a word that has a sequence of two identical vowels, i.e., /ee/ and /oo/.

