

A Contrastive Analysis of English and Hassania Consonant Sound Systems

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Abstract: *This study is conducted to contrast consonant systems of English and Hassania and describe their phonological differences regarding place and manner of articulation. This comparative method is mainly based on secondary data from previous studies but reinforced by primary data collected from EFL students using controlled observation technique. As findings, the analysis of both languages' consonant sounds shows that there are some similarities and differences. Although each one includes some consonants that do not exist in the other, 20 common consonants can still be distinguished: /b/, /t/, /d/, /k/, /g/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/, /dʒ/, /m/, /n/, /l/, /r/, /w/ and /j/. However, some of these consonants differ in terms of their place and manner of articulation. /t/, /d/, /s/, /z/, /n/, /l/ and /r/ are dentals in Hassania but alveolars in English. /r/, in particular, is alveolar approximant in English while it is dental trill in Hassania. In addition, Hassania comprises some places (i.e., pharyngeal and uvular) which are not found in English despite their great resemblance at the level of manners of articulation. EFL students' awareness of such phonological similarities and differences helps them cope with the difficulties that they might encounter during their learning process.*

Keywords: EFL, English Phonetics, Hassania Consonant Sounds, Manner of Articulation, Place of Articulation

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Introduction

Hassania is a dialect of Arabic, mostly spoken in Mauritania and the neighboring countries. Despite its relatively conservative nature, it has developed several innovations and borrowed many items, in particular certain phonological and morphosyntactic patterns (Taine-Cheikh, 2007). The difference between it and English is clear-cut when examining their components: phonetics, phonology, morphosyntax, semantics, etc. This is due to the fact that Hassania is a descendant from Semitic family while English from the Germanic sub-family of Indo-European language (AlShalaan, 2020). Perception of such a great distinction makes us limit this research paper to one particular aspect, phonology.

At the phonological level, studies proved that there is a little correspondence between letters and sounds in English as it has twenty-six letters but forty-four speech sounds (AlShalaan, idem). Hassania is different. It is considered a phonetic language like Arabic where there is a relatively considerable similarity between words and how they are pronounced. That's why Mauritanian English as a foreign language (Hereafter EFL) students encounter many difficulties in learning English pronunciation. They tend to pronounce the English words based on their spellings due to the influence of the phonetic languages that they have already known: Arabic and Hassania. This first language (hereafter L1) interference, which makes acquisition of a good pronunciation challenging, is the main reason for conducting this research paper through:

- Contrasting the consonant sound systems of both English and Hassania;
- Describing the phonological differences between the two languages regarding place and manner of articulation.

The findings of this research will shed light on the importance of contrastive studies in the context of Mauritania, which, according to my knowledge, has not drawn educators' attention yet. It also provides students with concrete information about their L1 phonological system and raises their awareness of the similarities and differences between the phonemic systems of their L1 and EFL. This is highly expected to facilitate EFL students' learning process, increase their knowledge and improve their performance.

Literature Review

English Phonemic Sound System

Many studies have been conducted to investigate each of these languages' sound system. English and its different dialects have drawn attention of many scholars from all around the world, such as Ladefoged (1999) who dealt with *American English*. Although there are many different dialects of English spoken in

North America, he only focused on the style of speech of younger educated Americans in the Far-Western and some of the Mid-Western parts of the United States. In *Australian English Pronunciation and Transcription*, Cox (2012) addressed pronunciation characteristics and provided detailed instruction in both phonetic and phonemic transcription of the Australian English. Roach (2009), in turn, in *English Phonetics and Phonology*, focused on explaining how English is pronounced in the accent normally chosen as the standard for people learning the English spoken in England. He takes into account the general theory (i.e., phonetics and phonology) about speech sounds and how they are used in language.

Regardless of the expected differences between the dialects of English, it has a linguistic system that is noticeably different from that of Hassania. It generally consists of 26 letters, which produces 44 speech sounds. Lack of correspondence between these letters and sounds implies that the number of speech sounds in a word may not be similar to the number of letters (Abdullahi & Ishola, 2020). For instance, the word “fight” has five letters, but the combination of these letters only makes three sounds. In general, English speech sounds are divided into 24 consonant sounds and 20 vowel sounds. They are /p/, /b/, /t/, /d/, /k/, /g/, /f/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/, /ʒ/, /dʒ/, /m/, /n/, /ŋ/, /l/, /r/, /w/, /j/, /i/, /u/, /ʊ/, /ɔ:/, /ɑ:/, /e/, /ɜ:/, /æ/, /ə/, /ɒ/, /ʌ/, /aɪ/, /eɪ/, /ɔɪ/, /aʊ/, /əʊ/, /eə/, /ʊə/ and /ɪə/ (Roach, idem).

Hassania Phonemic Sound System

Hassania, in turn, has many varieties because of its lengthy contact with the languages spoken in the region (Taine-Cheikh, 2020). It is in contact with the Arabic dialects spoken in southern Moroccan and southern Algerian, but the great influence on the different Hassania components is perceived to be a result of its contact with Berber languages and standard Arabic. Its coexistence with the languages spoken in the Sahel, i.e. Soninke, Pulaar, Wolof and European languages, such as French, has also left few clearly discernible traces.

Due to this contact, Hassania phonemic system has been extended to include new borrowed sounds. This makes it consist of 33 letters: ا \ʔ/, ب /b/, ت /t/, ث /θ/, ج /ʒ/, ح /h/, خ /x/, د /d/, د /dʲ/, ذ /ð/, ر /r/, ز /z/, ژ /zʲ/, س /s/, ش /ʃ/, ص /sʲ/, ض /dʲ/, ط /tʲ/, ظ /ðʲ/, ع /ʕ/, غ /ɣ/, ف /v/, ق /q/, ك /k/, ل /l/, م /m/, ن /n/, ن /nʲ/, ه /h/, و /w/, and ي /j/ (Taine-Cheikh, 2023). These letters are all considered consonants but used in combination with three diacritics (i.e., َ /a/, ِ /i/, and ُ /u/) to notate vowels. However, the number of phonemes is 49, split into 38 consonant sounds and 11 vowel sounds. They are /ʔ/, /b/, /bʲ/, /t/, /tʲ/, /θ/, /ʒ/, /h/, /x/, /d/, /dʲ/, /ð/, /r/, /rʲ/, /z/, /zʲ/, /s/, /ʃ/, /sʲ/, /dʲ/, /tʲ/, /ðʲ/, /ʕ/, /ɣ/, /v/, /vʲ/, /g/, /q/, /k/, /l/, /lʲ/, /m/, /mʲ/, /n/, /nʲ/, /h/, /w/, /j/, /æ/, /a:/, /ɔ/, /u:/, /i/, /i:/, /ə/, /aɪ/, /eɪ/, /əʊ/ and /aʊ/. Unlike English, Hassania is a phonetic language, where words are mostly pronounced as they are written.

Research Methodology

Observation and literature review as a mixed method are used here to decipher the knob of this research. Determination of the Hassania and English phonemes and their distinctive features are based on the results of the previous works, which have been conducted by famous researchers, such as Catherine Taine-Cheikh (2007), David Cohen (1963), Peter Roach (2009), Mike Davenport and S. J. Hannahs (2005), etc. However, examples illustrating the phonemes are extracted from EFL students at the University of Nouakchott, in particular those who are native speakers of Hassania. This is through the use of controlled observation technique in order to determine the level of contrast between both languages at the phonological level.

Analysis and Findings

Hassania and English Consonant Sounds

The literature review emphasized that Hassania consist of 38 consonant sounds according to Catherine Taine-Cheikh (2023) while English has only 24 consonants (Roach, idem). There are quite a number of common consonant sounds in both languages: /b/, /t/, /d/, /k/, /g/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/, /m/, /n/, /l/, /r/, /w/ and /j/. This also implies that each language includes some consonants that do not have equivalents in the other (AlShalaan, idem). The following consonants are unique to Hassania: /ʔ/, /bʲ/, /tʲ/, /h/, /x/, /dʲ/, /rʲ/, /zʲ/, /sʲ/, /dʲ/, /tʲ/, /ðʲ/, /ʕ/, /ɣ/, /vʲ/, /lʲ/, /mʲ/, /nʲ/. English likewise has such sounds as /p/, /ʃ/, /ŋ/. Pronunciation of these sounds are challenging for the Hassania native speakers, causing negative transfer.

Place of Articulation

In both English and Hassania, consonants may generally differ from one another based on the level of obstruction of the airstream in the vocal track (Rowe & Levine, idem), where the exact place of articulation for a specific sound will vary from one person to another, even from time to time for an individual. From this perspective, it is expected to have different places of articulation for even the common consonants in both languages.

Labial:

Labial sounds consist of bilabial, labiovelar and labiodental sounds. Bilabial sounds are produced by bringing the lips together (Rowe & Levine, idem). English bilabial sounds are four. They are as follows: /p/ in 'put', 'stop' and 'sport'; /b/ in 'but', 'knob' and 'laboratory'; /m/ in 'mother', 'lamp' and 'lam', and /w/ in 'wallet', 'cow' and 'forward' (Yule, 2010). Hassania, in turn, comprises five bilabial sounds: /b/ in /bu:f/ 'bottle', /mbɪr/ 'wrestler' and /gælæb/ 'to elbow', /b^s/ in /b^sɛrɣæl/ 'to make a bad quality of tea' and /gb^seɪl/ 'a while ago' and /ʔɪqɒb^s/ 'to swallow something using water'; /m/ in /mæʃru:ʃ/ 'a project', /jɪmʃi/ 'to go', and /gu:m/ 'stand', /m^s/ in /ma:ro/ 'rice' and /lɪgm^sæɪl/ 'lice'; /w/ in /wætə/ 'a car', /l-bəʊl/ 'urine' and /l-ʒəʊ/ 'atmosphere' (Taine-Cheikh, 2007). The Hassania emphatic /b^s/ and /m^s/ do not exist in English. Neither does The English /p/ in Hassania; that's why it is negatively transferred to /b/. For example, the borrowed words "pot" and "spaghetti" are pronounced "bot" and "sbaghetti" respectively (Taine-Cheikh, 2007).

/w/ can, moreover, be articulated as a labiovelar sound in both languages by rounding the lips while the back of the tongue is raised in the velar region (Rowe & Levine, idem & Taine-Cheikh, idem). In Hassania, this extends to include /b^s/, /m^s/ and /v^s/ according to Taine-Cheikh (2020).

As for labiodental sounds, they are formed with the lower lip and upper front teeth (Yule, idem). Both English and Hassania contain labiodental sounds. The English labiodental sounds are /f/ and /v/ as in 'fine' vs 'vine', 'wafer' vs 'waver' and 'leaf' vs 'leave'. The Hassania ones, in contrast, consists of /v/ and /v^s/. /v/ is perceived in /va:l/ 'to play a card in card game before its usual turn', /rɪvɪd/ 'carry', /ɪf:ɔ:v/ 'to see', and /v^s/ in /v^sa:l/ 'jack in card game', /v^sa:lə/ 'a female proper name' and /gərv^sa:v^s/ 'a type of hyena'.

Unlike English, the /f/ sound is markedly found in Hassania as an allophone of the phoneme /v/: /mɔfta:h/ = /mɔvta:h/ 'a key', /t^sfɪ/ = /t^svɪ/ 'switch off', etc.

Dental:

Dental sounds are articulated by the tongue and teeth, in contrast to labiodentals, which involve the articulation of the lower lip and teeth (Rowe & Levine, idem). Such sounds exist in both English and Hassania sound systems. The two English dentals are /θ/ and /ð/: /θ/ is found in words such as /θred/ 'thread', /ba:θru:m/ 'bathroom' and /maʊθ/ 'mouth' and /ð/ also in /ðæt/ 'that', /aɪðə/ 'either' and /beɪð/ 'bathe'.

In Hassania, dentals involve /d/, /d^s/, /t/, /t^s/, /s/, /s^s/, /z/, /z^s/, /n/, /l/, /l^s/, /r/ and /r^s/. /d/ occurs in words, like /dɔgdɔg/ 'to break' and /geɪd/ 'tie'; /d^s/ in /d^sæm/ 'hug', /wa:d^sæf/ 'clear' and /hɔd^s/ 'water bowl'; /t/ in /tmæɪt/ 'date', /mɪtlæf/ 'full' and /ʔɪmu:t/ 'to die'; /t^s/ in /t^sfɪ/ 'switch off', /s^sæt^sræ/ 'a line' and /b^sæt^s/ 'hit'; /z/ in /za:zɒ/ 'plastic' and /ʔɪmɪz/ 'to weave'; /z^s/ in /z^sæwz^sa:jə/ 'whistle' and /ʔɪmɪz^s/ 'to inflame'; /s/ in /sæmsa:r/ 'broker' and /əʃ-fæms/ 'the sun'; /s^s/ in /ʔɪmæs^smæs^s/ 'to re-wash' and /s^sæbj/ 'a child'; /n/ in /næʃna:ʃ/ 'mint' and /mɪn/ 'from'; /l/ in /læwæl/ 'the first' and /jɪmlɪk/ 'to have'; /l^s/ in /l^sæbə/ 'a lioness', /wæɪ^sæ/ 'or' and /jægvæɪ^s/ 'to close'; /r/ in /ra:br/ 'slow' /tkra:r/ 'repetition' and /r^s/ in /r^sæmba:jə/ 'a dress' /gær^saɪ/ 'a teacher' and /ɪdɔ:r^s/ 'to want'. Like the English dentals, all these sounds can come initially, medially and finally as illustrated above, but the use of non-emphatic sounds (i.e., /d/, /t/, /s/, /z/, /n/, /l/ and /r/) are more frequent than the emphatic ones (i.e., /d^s/, /t^s/, /s^s/, /z^s/, /l^s/ and /r^s/) (Taine-Cheikh, 2007).

Interdental:

The English dental sounds are sometimes called interdental from the perspective that they can be pronounced by placing the tongue tip between the upper and lower teeth (Yule, idem). Hassania also contains interdental sounds and they occur initially, medially and finally: /ð^s/ in /ð^særk/ 'now', ma:ð^s/ 'sharp', /ʃrɪ:ð^s/ 'large'; /θ/ in /θla:θə/ 'Tuesday' and /rəθə/ 'dung' and /ð/ in /ði:b/ 'wolf' and /lɔðm/ 'ear' (Taine-Cheikh, 2007).

Alveolar:

Alveolar sounds are articulated with the tip or blade of the tongue against the alveolar ridge that is located behind the upper teeth. English alveolar sounds are /t/, /d/, /s/, /z/, /n/, /l/ and /r/. /t/ is found in such words as 'talk', 'bottle' and 'hot'; /d/ in 'date', 'needle' and 'need'; /s/ in 'sit', 'translation' and 'chance'; /z/ in 'zebra', 'buzzard' and 'jazz'; /n/ in 'normal', 'mint' and 'cane'; /l/ in 'like', 'pillow' and 'call'.

Despite the existence of these sounds in Hassania, they are not considered alveolars. Instead, they are dentals. Some of these sounds, like /l/ and /r/, show some important discrepancies in the two languages. In BBC pronunciation, /l/ is a phoneme that has two allophones: clear [l] occurs before vowel sounds while dark [ɫ] found in other contexts (Rowe & Levine, idem). Hassania also has two variants of /l/: clear [l] and emphatic [l^ɛ]. However, they are sometimes considered two distinct phonemes. When substituting one for the other, there might be a change in meaning as in the following minimal pair: /wælə/ 'come back' vs /wæl^ɛə/ 'or' (Taine-Cheikh, 2007).

Substantial differences in the /r/ production and distribution are also found in many accents of English. In Received Pronunciation, /r/ is a post-alveolar sound and a frictionless continuant (AlShalaan, idem). It can be deleted when it is followed by a consonant; whereas, it is always prominent in Hassania and can never be dropped in any situation. It also has a contrastive emphatic version; i.e., /r^ɛ/: for example, /r/ in /da:r/ 'to put' vs /da:r^ɛ/ 'to want'.

Palatal:

Palatal sounds (sometimes called post-alveolar or prepalatal sounds) are formed when the blade of the tongue articulates with the back of the alveolar ridge or palate (Rowe & Levine, idem). The English palatal sounds are /ʃ/, /ʒ/, /tʃ/, /dʒ/ and /j/ as in the following examples: /ʃ/ in /ʃeɪm/ 'shame', /mæʃə/ 'masher' and /fɪʃ/ 'fish'; /ʒ/ in /ʒɑ:nrə/ 'genre', /plezə/ 'pleasure' and /gæɜ:ʒ/ 'garage'; /tʃ/ in /tʃɜ:ʃ/ 'church' and /bʊtʃə/ 'butcher'; /dʒ/ in /dʒʌdʒ/ 'judge' and /dʒʌdʒmənt/ 'judgment' and /j/ in /jes/ 'yes' and /dʒænjʊəri/ 'january'. According to these examples, these sounds can occur in three-word position except /j/, which is limited to the initial and medial positions.

All of these sounds are found in Hassania except /tʃ/ and can come initially, medially and finally. /ʃ/ is noticed in /ɪʃi:r/ 'a child', /ʃæg/ 'tear' and /bu:ʃ/ 'a bottle'; /j/ in /jæsmæ/ 'to hear' and /^ɛəba:jə/ 'a type of women's clothes' and /ta:j/ 'tea'; /ʒ/ in /zæmræ/ 'ember', /gæzə/ 'very strong teeth' and /rəga:ʒ/ 'somebody'. Unlike English, the Hassania /dʒ/ sound is very uncommon. Although researchers, such as Taine-Cheikh (2007 & 2023), have assumed that it does not exist, we have been able to find some examples clarifying its existence: /gædʒə/ 'a type of mice', /ndʒæha:wæ/ 'usually obscene: curse' and /mdʒəngær/ 'a sickness causes spots on skin'. It is more obvious through this minimal pair: /gædʒə/ vs /gæzə/.

Studies also emphasized that Hassania borrowed some palatal phonemic sounds, i.e., /tʃ/, /dʒ/ and /nʃ/, from Zenaga according to Taine-Cheikh (2007), and they have preserved their pronunciations in the borrowed lexemes, but we have not been able to find them in words.

Velar:

Velar sounds are produced with the back of the tongue against the velum (Yule, idem). English has three velar sounds: /k/, /g/ and /ŋ/. They can be in three-word position except /ŋ/, which is only placed medially and finally. /k/ is found in such words as /kæt/ 'cat', /ək'nɒlɪdʒ/ 'acknowledge' and /keɪk/ 'cake'; /g/ in /get/ 'get', /bæɡɪdʒ/ 'baggage' and /bɪɡ/ 'big'; /ŋ/ in /stŋ/ and /ʌŋkl/ 'uncle'.

Like English, /k/ and /g/ exist in Hassania. /k/ is found in words such as /kta:b/ 'a book', /mæktæb/ 'an office', /b^ɛa:k/ 'brunch for the volunteers who help farmers in the agricultural operations' and /g/ in /gæɪb/ 'a heart', /lɪɡvəl^ɛ/ 'lock' and /vəʊg/ 'above'. Hassania lacks existence of the English /ŋ/ sound, but it includes other velar sounds that does not exist in English, /q/, /ɣ/ and /x/. /q/ is perceived in words like /qlæm/ 'a pen', /va:jæq/ 'awake' and /l-jæqu:t/ 'ruby'; /ɣ/ in /ɣa:jə/ 'a need' and /tæɣæja:rət/ 'a doeling goat'; /x/ in /ɪxæɪl/ 'to divorce', /xɑ:lə/ 'an aunt' and /l-mæx/ 'marrow'. These three consonant sounds may also be considered as post-velars or uvulars when you articulate them by using back of the tongue and uvular.

Pharyngeal:

Like Arabic, /ħ/ and /ʕ/ are the only pharyngeal sounds in Hassania. They do not have any equivalents in English. They are formed with the pharynx and the back of the tongue (AlShalaan, idem & Salameh, 2021).

For instance, /h/ is noticed in /hma:r/ 'a donkey', /jimhi/ 'to delete' and /ɪs'æh/ 'possible'; /ʁ/ in /ʁætru:s/ 'a billy goat' and /næfna:ʁ/ 'mint'.

Glottal:

Both Hassania and English share sounds made at the glottis: /h/ and /ʔ/. In Hassania, /h/ is perceived in such words as /howæ/ 'he', /mohim/ 'improtant' and /bowa:h/ 'to rummage'. Glottal stop 'ʔ' /ʔ/ is also existing, like /ʔhi:n/ 'to exhaust' or 'to humiliate', /sæʔlæ/ 'usually obscene' and /l-mæʔ/ 'water'. English, in turn, has the allophonic glottal stop /ʔ/. It is originally adapted from the Arabic alphabet (Ball, n.d.). Such a sound is sometimes used in place of a /t/ sound as in [bʌʔn] 'button' and [maʊnʔn] 'mountain', but it often occurs between vowels, as well as in many other positions within utterances (Rowe & Levine, idem & McMahon, 2002). It can, for instance, separate adjacent vowels in phrases, like *India [ʔ] and Pakistan* though many speakers tend to insert an r instead: *India [r] and Pakistan* (Ball, n.d.). As for the /h/ sound, it can be found in /haʊz/ 'a house' and /pəhæps/ 'perhaps', but it never occurs at the end of a syllable.

Manner of Articulation

Description of the consonant sounds above in terms of the place at which the airstream is obstructed along the vocal track triggers investigation of the manner in which the airstream is constricted within the vocal track. Such a description is necessary in order to differentiate between some sounds which, in the preceding discussion, have been placed in the same category (Yule, idem).

Stops:

Stops are sounds created by momentarily cutting off the airstream (Rowe & Levine, idem). Closing off the airstream creates pressure behind the point of articulation. In Hassania, plosives are bilabial /b/ and /b^s/, dental /d/ and /d^s/, /t/ and /t^s/, palatal /tʃ/ and /dʒ/, velar /k/ and /g/, uvular /q/ and glottal /ʔ/ (Taine-Cheikh, 2007). English, in turn, has such plosives as bilabial /p/ and /b/, alveolar /t/ and /d/, velar /k/ and /g/ and glottal /ʔ/ (Yule, idem & Rowe & Levine, idem). This investigation shows that both languages share the following plosives: /b/, /t/, /d/, /k/, /g/ and /ʔ/ although each one includes some plosives that do not exist in the other, such as the Hassania /b^s/, /d^s/, /t^s/, /tʃ/, /dʒ/ and /q/ sounds versus the English /p/.

Fricatives:

Production of fricatives involves an incomplete obstruction of the airstream. Instead of the completed obstruction that produces the stop sounds, the airstream is only partially blocked, creating turbulence beyond the constriction (Rowe & Levine, idem). Hassania contains exceptional fricative sounds (i.e., /v^s/, /ð^s/, /s^s/, /z^s/, /ɣ/, /x/, /ħ/ and /ʁ/) that do not have equivalents in English, but both languages share such fricatives as /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/ and /h/.

Affricates:

Affricate sounds are a combination of two sounds, starting out as a stop but ending up as a fricative (Rowe & Levine, idem). English has two affricates: /tʃ/ and /dʒ/ while Hassania only comprises one affricate: /dʒ/. But this Hassania affricate sound is very rare in that many researchers do not confirm its existence.

Nasals:

Unlike most sounds, which are produced with the velum raised, nasal sounds are articulated with the velum lowered, allowing the airstream to escape through the nose (Yule, idem). The English sounds created this way are /m/, /n/ and /ŋ/. Hassania, in addition to the emphatic /m^s/, has the same sounds except /ŋ/.

Liquids:

Liquids differ from the other classes of sounds. They involve only minimal obstruction of the airstream and friction is not articulated (Rowe & Levine, idem). There are two liquids in English: /l/ and /r/ but one in Hassania: /l/.

The [l] sound is a common lateral liquid in both English and Hassania (Rowe & Levine, idem & Taine-Cheikh, 2007). It is formed by letting the airstream flow around the sides of the tongue as the tip of the tongue makes contact with the middle of the alveolar ridge (Yule, idem). While Hassania has an emphatic phonemic version, i.e. /l^s/ sound, used to distinguish a word from another, English distinguish between clear 'l' [l] and dark 'l' [ɫ]. According to it, these two allophones are in a complementary distribution as explained

above (see p.6). However, both the Hassania emphatic version and English dark ‘l’ are commonly formed with the back of the tongue raised.

As for the English r sound, it is usually formed by curling the tip of the tongue up behind the alveolar ridge and by bringing the tongue forward and upward toward the alveolar ridge without touching the ridge (Rowe & Levine, idem & Yule, idem). Such a way of production, where curling takes place, is often called *retroflex*. However, foreign learners are usually recommended to pronounce it as a post-alveolar *approximant* (Roach, idem), where the tip of the tongue only approaches the alveolar area in approximately the way it would for a ‘t’ or ‘d’, but never actually makes contact with any part of the roof of the mouth.

In general, many accents of English (e.g., Scottish, Irish, West of England accents and most American ones) do pronounce ‘r’ after vowels, in the final position and before a consonant. This type of pronunciation is called *rhotic* accents while accents in which ‘r’ only occurs before vowels (e.g., BBC) are called *non-rhotic* (Roach, idem).

Trills:

Sounds, like [r] in Hassania, is considered trill. It is produced when the tip of the tongue rapidly vibrates against the alveolar ridge (Ball, n.d.). It has an emphatic phonemic version, i.e. /r^s/. Both variants can distinguish words from one another, /da:r/ ‘put’ vs /da:r^s/ ‘want’. Unknown in English, but it’s the common r in Spanish and normal in many languages, such as Arabic, Italian and Russian, as well as in the German of Austria, Switzerland and southern Germany.

Glides:

The sounds /w/ and /j/ are described as glides (Yule, idem). They exist in both English and Hassania, displaying elements of both vowels and consonants; they are articulated with the tongue in motion (or gliding) to or from the position of a vowel. That’s why they are sometimes called semi-vowels.

IPA for Both English and Hassania Consonants

English IPA Consonant Chart

	Bi-labial	Labio-dental	Inter-dental	Dental	Alveolar	Post-alveolar	Palatal	Labio-velar	Velar	Glottal
Stop	p b				t d				k g	ʔ
Fricative		f v	(θ) (ð)	θ ð	s z	(ʃ) (ʒ)	ʃ ʒ			h
Affricate						(tʃ) (dʒ)	tʃ dʒ			
Nasal	m				n				ŋ	
Liquid					l r					
Approximant					(ɹ)					
Retroflex					(ɻ)					
Glide	w						j	(w)		

Remark:

This IPA chart is based on Yule’s work: *the study of language* (2010) and Rowe’s & Levine’s book: *a concise introduction to linguistics* (2018). However, it takes into account the opinions of scholars, such as Roach (2009). Use of parentheses also refers to the possibility of pronouncing the given sounds according to the designated place or manner of articulation.

Hassania IPA Consonant Chart

	Bilabial	Labiodental	Inter-dental	Dental	Palatal	Labiovelar	Velar	Uvular	Pharyngeal	Glottal
Stop	b b ^ɸ			t d t ^ɸ d ^ɸ	t ^y d ^y	(b ^ɸ)	k g			ʔ
Fricative		v v ^ɸ	θ ð θ ^ɸ	s z s ^ɸ z ^ɸ	ʃ ʒ	(v ^ɸ)	q ɣ x	(q) (ɣ) (x)	ħ ʕ	h
Affricate					(dʒ)					
Nasal	m m ^ɸ			n	n ^y	(m ^ɸ)	ŋ			
Lateral				l l ^ɸ						
Trill				r r ^ɸ						
Glide	w				j	(w)				



Remark:

Taine-Cheikh's work: *Hassaniyya Arabic* (2007 & 2020) represents the main source for this chart. Like the English consonant chart, parentheses are used to label the alternative place and manner of articulation.

Discussion

Based on the purpose of this contrastive study, which investigates English and Hassania consonant sounds regarding place and manner of articulation, it was obvious that both consonant systems differ from one another in many ways despite the existence of considerable similarities. The two languages share around 20 consonant sounds: /b/, /t/, /d/, /k/, /g/, /v/, /θ/, /ð/, /s/, /z/, /ʃ/, /ʒ/, /h/, /dʒ/, /m/, /n/, /l/, /r/, /w/ and /j/. However, similarities of these consonants do not guarantee their articulation at the same place of articulation. In Hassania, /t/, /d/, /s/, /z/, /n/, /l/ and /r/ sounds are dentals, articulated by using the tongue and the teeth; whereas, in English, they are alveolar, formed with the tongue and the alveolar ridge.

At the level of the uncommon consonant sounds, it was found that they show common features. The Hassania consonants, like /q/, /ɣ/ and /x/, do not have any equivalents in English, but they can share the same place of articulation (i.e. velar) with such English sounds as /k/ and /g/. The English /θ/ and /ð/ sounds can also be produced at the same place (i.e. interdental) with the unique Hassania /θ^ɸ/ sound.

At the manner level, the results showed that the common consonant sounds above share the same manners of articulation except /r/. This sound is trill in Hassania, made by vibration of the tongue against the alveolar ridge; whereas, in English, it is pronounced differently. It can be produced as approximant (where the tongue only approaches the roof of the mouth without touching it), retroflex (when curling the tip of the tongue back near the alveolar ridge), or flap (which involves a single tap of the tongue tip against the rear of the upper front teeth or the alveolar ridge) depending on a given accent.

Different manners of articulation were, moreover, found for the sounds having the same place of articulation. The Hassania dentals (i.e., /t/, /t^ɸ/, /d/, /d^ɸ/, /z/, /z^ɸ/, /s/, /s^ɸ/, /n/, /l/, /l^ɸ/, /r/ and /r^ɸ/), for instance, make different sounds because of the manner of articulation. Five manners distinguish these sounds from one another. They are as follows: four plosives (/t/, /t^ɸ/, /d/ and /d^ɸ/), four fricatives (/z/, /z^ɸ/, /s/ and /s^ɸ/), one nasal (/n/), two laterals (/l/ and /l^ɸ/) and finally two trills (/r/ and /r^ɸ/). Similarly, English bilabials can be classed into four manners: two plosives (/p/ and /b/), one nasal (/m/) and one glide (/w/).

The differences between these languages extend to include allophony in that the /f/ sound, which distinguishes meaning in English, is considered an allophone of the phoneme /v/ in Hassania. The /ʔ/ sound

is, moreover, very important in Hassania that it is seen as a phoneme; whereas, in English, it is an allophonic sound, used in some varieties of English. The common phonemes, in turn, showed differences in terms of their distributions. The common /h/ sounds can be found in three word position in Hassania while it is only perceived initially and medially in English.

Conclusion

To sum up, learning of English in a context dominated by Hassania raises awareness of the importance of comparative and contrastive studies to identify the level of similarities and differences between the two languages. This research paper has focused on comparing and contrasting the consonant sound systems of both languages based on the place and manner of articulation. The results showed many phonological similarities and differences. Both English and Hassania share 20 consonant sounds, but some of these common sounds differ in terms of their place and/or manner of articulation. The /r/ sound, for instance, is dental trill in Hassania while it is identified as alveolar approximant in English. Some Hassania consonant sounds do not exist in English and vice versa, what resulted in finding such new places of articulation as *pharyngeal* and *uvular* that are not found in English. In contrast, Hassania contains all the places and manners of articulation for the English consonants regardless of their differences from its consonant system. This result positively influences EFL students' learning process and improve their performance.

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