

The Writing Difficulties of the Difference between Graphemes and Phonemes in Arabic and English

A contrastive Study

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Abstract

The grapheme-phoneme link in Arabic and English is the subject of this study. Some learners of both Arabic and English find difficulty in the process of reading and writing. Such difficulty rises from the difference between the grapheme and phoneme. The main aim of this research is to demonstrate the difficulty that the learners of both Arabic and English encounter in the process of reading and writing. To comprehend the depth of the two languages and the interaction between their graphemes and phonemes, it is necessary to study their orthographies. When short vowel marks and other diacritical (tashkeel) signs are employed, Arabic orthography is transparent; however, in the case of their absence, they become opaque. However, the orthography in English is confusing, as some words of English are adopted from other languages such as French, Italian and Latin. Some of the loaned words are inserted in English with their original spellings without any modification in order to suit English language pausing a difficulty in reading and writing. This research is based on secondary data from previous case studies. The researcher makes a comparison and analysis of such data to address the proposed questions. This research looks at Arabic letters and the various ways that they are written. It also highlights the confusion that happens to even native Arabic speaker with the “ي” and “ى”, “ة” and “ه”, and the different places of “ء” “Hamzah”. Understanding the several forms of graphemes (monographs, digraphs, trigraphs, and quadgraphs) and how they relate to the graphemes of consonant and vowel phonemes are the main focus in English. Hence, the diacritical markers are essential to any learner of Arabic. However, in English, the diacritics’ knowledge is essential as in Arabic.

Keywords: Grapheme, Phoneme, Assimilation, diacritics, ligaturing

1.1 Introduction

Some of the languages benefit from an understanding of the link between the grapheme and the phoneme since it makes reading and writing simpler. In order to gain a greater understanding of the challenges faced by language learners of different languages and to facilitate the learning process, the researcher in this study analyzes this link between the Arabic and the English languages by drawing on the relevant literature.

The researcher concentrates on the correspondence between the Arabic and English grapheme-phoneme systems. This study focuses on the link between the orthographic inventory, and the usage, impact, and relationship between the Arabic language's many graphemes and phonemes. This can take place through investigating assimilation, homographs and allographs in both Arabic and English. The focus is on the reason behind the confusion that happens to the non-native speakers of Arabic and even some native Arabic speakers with the “ي” and “ى”, “ة” and “ى”, (Dhayef & Al-Aassam, 2020; Alshareef & Alshareef, 2021) and the different positions of “ء” “Hamzah” and the cases in which it is omitted or simplified. When examining English, the same processes are used, but a greater emphasis is placed on the language's phonemes because it has 44 phonemes (Dhayef & Al-Aassam, 2020), compared to Arabic's 36 phonemes (Sabir & Alsaed, 2014). In English, the research fully discusses the various sorts of graphemes including monographs such as "gun" ɡʌn/, digraphs such as "phone" /fəʊn/, trigraphs such as "watch" /wɑ:tʃ/, and quadgraphs such as "tongue" /tʌŋ/. The researcher also highlights the representation of the consonant and vowel phonemes as graphemes. In addition, the unpredictability and ambiguity of the relation between English grapheme and phoneme are clarified in this study. The reason behind such unpredictability and ambiguity is also explained. Such ambiguity is raised from diphthong and triphthong.

The effect of the grapheme-phoneme relationship, including allography, homography, assimilation (progressive, regressive, coalescent), and silent letters, is examined by the researcher in the study at hand. Therefore, the primary goal of this study is to respond to the following questions:

1. What are the discrepancies between Arabic and English phonemes and their corresponding graphemes?
2. What are the challenges in reading Arabic?
3. What are the challenges of reading English?
4. Does the process of understanding the grapheme-phoneme link in a language useful when watching a foreign language film? And How?

2.1 Literature Review

The terms grapheme, phoneme, and morpheme must be distinguished in order to keep the subject simple. As a result, these concepts are defined in both languages and demonstrate how grapheme and phoneme are related. In both

Arabic and English, the connection between the grapheme and the phoneme is highlighted.

The fundamental building blocks of language systems that have a big impact on language learning, literacy development, and communication are orthography, graphemes, and phonemes. According to Alshareef & Alshareef, 2021; Share, 2021; Dhayef & Al-Aassam, 2020, orthography in the English language refers to the system of writing that uses the Latin alphabet, which consists of 26 letters, as well as numerous symbols and punctuation marks. The smallest elements of written language, known as graphemes, are used to represent sounds or phonemes in words. They are often connected to individual letters or groups of letters (Hopkins, 2019). On the other hand, the smallest units of sound that identify meaning in words are called phonemes, which can change based on the context and regional dialects (Hopkins, 2019). Both transparent (shallow) and opaque (deep), with consistent grapheme-phoneme correlation, and inconsistent grapheme-phoneme connection, were mentioned by Hopkins (2019).

Arabic has a different writing system and phonetic properties from English, yet orthography, graphemes, and phonemes are all as significant. According to Share, 2021, Dhayef & Al-Aassam, 2020, and Alshareef & Alshareef, 2021, the Arabic script is based on a cursive style with 28 letters that are written from right to left and can take varied shapes depending on their position in a word. In addition to vowel sounds and other characteristics, such as stress or pronunciation, Arabic graphemes also contain diacritical signs, called harakat (Al Hafiz & The, 2021; Alshareef & Alshareef, 2021). Arabic phonemes are different from those in English because they contain a number of consonants and vowels that vary in shape and pronunciation depending on the dialect (Mustafawi, 2019).

2.2 Arabic grapheme-phoneme relationship:

The Arabic writing method is different from the English writing system in that words are written from right to left together with spaces separating them to signify different letters (salamun alaykum) (share, 2021). The Middle East and Africa are home to many distinct nations that speak Arabic, which is a semitic language. 28 letters and 14 diacritical marks make up the Arabic alphabet (Alshareef & Alshareef, 2021). It is assumed by Share (2021) and Dhayef & Al-Aassam, 2020 that the number of dots on, in, or under the letter (/

(/ ب،ت،ث،/،س،ش،/،ج،ح،خ،/،غ،ع) and the diacritical marks/ short vowel (بِ،بُ،بَبْ،بَبْ،بَبْ،بَبْ) determine how different the letter shapes are. The diacritics and dots are briefly explained in this research.

Table 1: Arabic diacritical marks:

Diacritical Marks التَّشْكِيل				
Tanween with Shaddah	Tanween تَنْوِين	Short vowels with Shaddah شَدَّة	Short vowels	
اَ	اَ	اَ	اَ	fatHah فَتْحَة
اِ	اِ	اِ	اِ	kasrah كَسْرَة
اُ	اُ	اُ	اُ	DHammah ضَمَّة
		اْ	اْ	sukuun سُكُون

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Note. Adapted from “Diacritics in Arabic (2)” by Ibnulyemen, 2018.

To make it simpler for young learners to read the letters in the Arabic language, diacritics are attached to them. According to the sound that needs to be uttered in Arabic language, the diacritics are either put above or below the letter (Alshareef & Alshareef, 2021). However, advanced readers can read words written in newspapers, periodicals, and books that lack diacritical marks. Because they are not accustomed to reading unusual words, young children cannot read words without diacritical marks. Hence, teachers utilize diacritical marks to aid students in word decoding until they become proficient in word recognition (Ibid.).

As opposed to other languages such as French and English, learning to write and read Arabic is simpler for beginners thanks to the vowelized Arabic's

straightforward orthography and grapheme-phoneme correlation. The Arabic without vowels is more opaque and unclear, nonetheless (Alshareef & Alshareef, 2021).

2.2.1 Homographs

Understanding Arabic is not sufficient because homography can occur when reading modern Arabic, which is written without diacritical marks. Homographs, such as (in a high place علي) (على), (he wrote كَتَبَ) (was written كُتِبَ), are two words that have the same spelling but different meanings. They may or may not have the same sound. However, these graphemes (diacritics) were designed to exclude any possibility of phonological errors when reading Arabic, particularly the Holy Qur'an. They also improve the clarity of the Arabic alphabet. However, without these symbols, which stand in for short vowels, the language would be extremely opaque and challenging to understand even for native speakers (Dhayef & Al-Aassam, 2020; Alshareef & Alshareef, 2021).

2.2.2 Allographs

Another challenging phenomenon is Allographs. They are graphemes with two or more shapes. The reader must understand how Arabic phonemes are expressed as graphemes in order to read Arabic correctly. This might be challenging because each letter in Arabic can take one of up to four different forms depending on where it appears in a word (isolated, initial, middle, or final). Table 2 shows the various forms of several Arabic letters in various word places.

Table 2: Ligaturing: showing the same letter in several word places in various letter shapes.

Graphemes	Initial, mid and last	Phonemes	Examples
ك	ك ك ك	/k/	كتاب، مكتب، كشك، شباك
ل	ل ل ل	/l/	ليث، سليم، ممل، مال
م	م م م	/m/	ملعب، ثمن، ملثم، حمام

ن	نـ ن نـ	/n/	نرد، مسنون، من، أمان
ه	هـ هـ هـ	/h/	هائل، مهم، فقه، وجوه
ة	ة	/t/ /h/	

The next six characters, however, are disjointed and force spaces between words (“ر”, “ز”, “د”, “ذ”, “ا”, “و”) (Almusawi, 2022). For instance, the letter Alif only connects with the letter before it, resulting in a space following it that separates any other letters (ibid.). Table 3 displays the Arabic graphemes that are disconnected as well as where they appear in the word.

Table 3: Disconnecting Arabic graphemes.

Graphemes	Initial, mid and last	Phonemes	Examples
ا	ا -ا -ا	/a/	أحمد, فأر
ذ	ذ -ذ -ذ	/ð/	ذيل, مذيع, معاذ
د	د -د -د	/d/	دب, حديد, برد
ر	ر -ر -ر	/r/	رجب, برج, قطار
ز	ز -ز -ز	/z/	زرار, مازن, خبز
و	و -و -و	/w/ /u:/	ورق, زورق, جرو

With "Hamza" or "Madd" above or below it, a dagger for the letter, and alif maksura, there are six possible methods to write the letter alif.

Table 4: the Arabic letter Alif's shapes and examples of it within words.

	Beginning of words	Middle of words	End of Words
The letter Alif أ	أ / آ / ا / إ	أ / أ / أ / ا	أ / ا / ي / أ
Example words	أحمد / استقبل / آمن / إبرة	دار / بأس / رأس / هذه	مرفأ / منى / عصا / قرأ

Note: Adapted from “Factors Affecting the Writing Performance in Hearing and Deaf Children: An Insight into Regularities and Irregularities of the Arabic Orthographic System” by Almusawi, 2022.

In the Qur'an and essentially all Arabic literature, the word "alif" appears in four different ways. The first is the standard alif letter without anything above it or below it (ا), as in the word “قرار”. Only the Arabic version of the holy Qur'an contains the dagger alif, often known as the "little alif sign," (ـٰ) or (ـِ) found in a word like “الرَّحْمَنُ”. Third is alif with a madd symbol, as in the word (دعاء), and this alif in this position is then extended for five counts, or five harakat, when reciting the Qur'an. This is known as alif maksura, and it can occasionally be seen at the end of words in verbs like baka بكى, proper nouns like (ليلي), and prepositions like ila إلى (to). Thus, these are all the shapes and forms that are referred to as "alif" in the Quran and elsewhere (Arabic 101, 2021).

The (ي / ي) and (ه / ه) are difficult in Arabic because they appear at the end of words, according to Al-Hagree (2019). The word “ليلي” [Layla] (the “ي” is corresponds to the phoneme /a/) is a female given name but “ليلي” [laili:] (the “ي” corresponds to the phoneme /i:/) is an adjective means “nocturnal”. Therefore, in this example, misusing the two dots modifies the word's lexical and semantic meaning. The same holds true for "a library" [maktabah] and "his office/desk" [maktaboh] (both "maktabah" “مكتبة” and "maktaboh" “مكتبه”).

In the second case, the “ه” "haa" is a possessive adjective indicating who owns the office or desk. When we pause on the "ه" without a short vowel (haraka: fatha, kasrah, or dhamma) or tanween above it, the "taa marbutah" “ة” and the "haa" “ه” can both be pronounced as the phoneme "h," but the “ة” corresponds to the phoneme "t" in connected speech or when short vowels are present along with the nū nation (Ibnulyemen Arabic, 2021).

Like any language, Arabic letters can have different pronunciations depending on the letters around them, and some Arabic letters or diacritics can even be pronounced incorrectly by some native speakers. The letter alif is one of the most perplexing letters, as demonstrated by the dagger/khinjari alif (الالف الجنجرية), which is written as a diacritical mark rather than as the word's primary letter. The following table by Cherifi and Guerti (2021) provides an illustration of such.

Table 5: Transcription mistakes taking place in the midst of words with basic letter-to-sound correlation

Word	Meaning	1-to-1 correspondence	The correct Transcription	The source of the transcription error
آمَنُوا	They believe	[?a:manuwa:/	[?a:manu:]	In this example the grapheme “و” “waw” is mistakenly pronounced a consonant /w/ while it should be a long vowel /u:/
عَنْبَر	Amber	[?’anbar]	[?’ambar]	the voiced alveolar nasal /n/ phoneme is assimilated to the voiced bilabial nasal phoneme /m/ as it is followed by the phoneme voiced bilabial stop /b/ to make the place of articulation close
الله	God	[?allah]	[?alla:h]	There is a dagger alif above the shadda on the "lam" "ل" which is pronounced as a long /a:/ phoneme.
إِلَه	divinity	[?ilah]	[?ila:h]	The same error
لَكِنْ	But	[lakkin]	[la:kkin]	The same error
طَه	Taha: A patronym of the prophet	[taha]	[ta:ha]	ta ha" are separate letters similar to "كهيعص" and can be also a patronym for the prophet Muhammed.
الرَّحْمَن	The Most	[?arraX’mān]	[?arraX’mā:n]	mispronunciation because of

	Gracious			the misuse of the diacritic dagger alif
هَذَا	This : In the masculine form	[haDa:]	[ha:Da:]	mispronunciation because of the misuse of the diacritic dagger alif
هَذِهِ....	This : In the feminine form	[haDihi]	[ha:Dihi]	mispronunciation because of the misuse of the diacritic dagger alif

Note. Adapted from “Arabic grapheme-to-phoneme conversion based on joint multi-gram model” by Cherifi &Guerti, 2021, *Int J Speech Technol* 24, 173–182.

As with the first example in the preceding table, the Waw and ya' are also dual-purpose letters that might be used to represent both vowels and consonants, which can be perplexing at times (Share, 2021). However, Mustafawi (2019) also regarded the vowels “waw” “و” and “ya” “ي” as diphthongs as in the phoneme /aj/ in “كي” and the phoneme /aw/ in “أو” .

2.3 Assimilation :

In Arabic, assimilation refers to the blending of two sounds that are comparable, homogeneous, or approximate in their qualities into one sound, such as *من /يعمل/* become *ميعمل/*

قننين. become قد تبيين. In Arabic, there are two different assimilation processes: partial assimilation and complete assimilation. The first type of assimilation occurs when the quiescent nun or nunation appears at the end of a word followed by another that begins with one sound from this group “الميم, النون, الواو, الياء” . This is referred to as partial assimilation “الادغام الناقص” . The complete assimilation “الادغام الكامل” is the second sort of assimilation, which occurs when a quiescent nun or nunation meets each of “اللام او الراء” (Salih, 2012). However, in English, there are three types of assimilation which are discussed below.

Table 6: Transcription mistakes taking place at the boundary between words when there is a straightforward letter-to-sound connection

Example	Meaning	1-to-1 correspondence	The correct Transcription	The source of the transcription error
إِنْ يَقُولُونَ إِلَّا كَذِبًا	what they say is nothing but falsehood	[?in jaqulu:n]	[?ijjaqulu:n]	When [n] is at the end of a word and followed by a word beginning with [j], so [n] assimilates partially to this sound; <i>it is the partial regressive assimilation.</i>
وَمَا لَهُمْ مِنْ دُونِهِ مِنْ وَالٍ	besides Him, they haven't any protector	[min wa:l]	[miwwa:l]	When [n] is at the end of a word and followed by a word beginning with [w], so [n] assimilates partially to this sound; <i>it is the partial regressive assimilation.</i>
وَمَا لِلظَّالِمِينَ مِنْ نَصِيرٍ	for those that do wrong there is no helper	[min nasi:rin]	[minnasi:rin]	When [n] is at the end of a word and followed by a word beginning with [n], so the first [n] assimilates partially to the second one; <i>it is the partial regressive assimilation.</i>
وَاللَّهُ خَلَقَ كُلَّ دَابَّةٍ مِنْ مَاءٍ	And Allah has created every animal from water	[min ma:?in]	[mimma:?in]	When [n] is at the end of a word and followed by a word beginning with [m], so [n] assimilates partially to this sound; <i>it is the partial regressive assimilation.</i>
يَا أَيُّهَا النَّاسُ إِنَّا خَلَقْنَاكُمْ مِنْ ذَكَرٍ وَأُنْثَى	O mankind! We created you from a single (pair) of a male and a female	[min Dakarin]	[miDDakarin]	<i>[n] is concealed if it is followed by the sound [D]. It is an regressive concealment phenomenon.</i>

Note. Adapted from “Arabic grapheme-to-phoneme conversion based on joint multi-gram model” by Cherifi &Guerti, 2021, *Int J Speech Technol* 24, 173–182.

2.4 Use of Hamzah in Arabic:

According to Arabic grammarian Sibawaih, the glottal stop "hamzah," which means "compression," is an independent consonant that brings the total number of letters in the Arabic consonant to 29 (Almusawi, 2019). It can be utilized as a

diacritical mark above or below the letters (alif, ww, or y') or as a stand-alone letter. By obstructing airflow between the vocal cords in the glottis, the larynx, also referred to as the voice box, the sound produced is known as the hamzah sound. Its phonologically identical counterpart, "ayn," serves as the basis for its orthographic symbol (Almusawi, 2019). The different ways that hamzah is pronounced are a reflection of the numerous regions and dialects of the Arabic language. Its spelling depends on where it appears in the word—at the beginning, in the middle, or at the end. Its own vowel mark and the mark of the letter that comes before it both have an impact on it when it is in the medial and final places of a word (Ibrahim, 1975; Alnawasra, 2011).

In Arabic, hamzah may appear in many different forms, including nouns like "ab" "أب" for "father" and "um" "أم" for "mother," verbs like "akala" "أكل" for "ate" and "akhadha" "أخذ" for "took," pronouns like "ana" "أنا" for "me" and "anta" "أنت" for "you," prepositions like "ilá" "إلى" for "to," conditions like "itha" "إذا" for "if," and question words like "ay" "أي" for "which" Therefore, while transmitting the meaning of a word, it is crucial to do so in the manner prescribed by the textual rules of hamzah. For instance, the meaning is inverted and the person being questioned is now the one who asked the question if the clause "he asked" is spelled wrongly with a hamzah shown on y' "سئل" (so?ela) rather than alif "سأل" (sa?al). If the hamzah is written on y' rather than alif, the expression "يكافأ" (yokafa?) meaning "the one being awarded" changes to "يكافئ" (yokafe?) "he is awarding." Consequently, the writer shall write the Hamza correctly to avoid being misconstrued, which is confusing to even native Egyptian speakers specifically and Arab speakers generally (Ibid.).

Contrary to Arabic letters, which may have up to four various forms according to where they are in the word and what other letters they are associated to, Hamzah has only one graphemic symbol (ء). However, it emerges in six graphical varieties (أ، إ، ء، ئ، و، هـ) based on its location inside the word (beginning, medial, final, or isolated), and its previous letter move (fatha, dammah, or kasrah) (Almusawi, 2019). Alif, wow, and y', the three Arabic consonant letters/long vowels that are commonly referred to as the "seats or chairs" for the hamzah in the modern form of the Arabic alphabet, can appear separately on the letter a, also known as "aloof," or as a diacritical mark. These long vowels are used as seats in the hamzah, therefore they are never able to retain their phonetic values or dots (it is no longer "ي" it turns to "ئ" without dots), if any, and only exist graphically in the script.

Despite the hamzah's multiple graphemic seats and shapes, the hamzah's phonetic representation is not differentiated (Almusawi, 2019). However, when spoken, hamzah displays a variety of aural patterns. The Arabic word hamzah can also be completely uttered, inserted as a prefix, softened, changed, removed, or any combination of these. Arab speakers frequently utilize a "lightening" technique because they consider the hamzah to be a "heavy" articulation (Solomon, 1999). According to Sibawaih, there is a continuum in which hamzah might appear as a weakening, replacement, or eradication.

The act of deleting or changing vowels or consonants, as in "kal" كل instead of "akala" "ate" اكل and "wara" وراء instead of "war" "ورا" "behind," is what is meant by "easing or lightening the hamzah" in the investigated case of the Egyptian Arabic dialect. The word's initial, middle, and final positions are regularly changed to omit hamzah. Other times, to complete the process of conversion, the silent hamzah is converted into a vowel according to the type of vowel that the preceding letter is given. Vowels ending in a, u, or I are employed to fill the void left by the absence of hamzah, as in the Arabic words "راس" "ras" for "head" in place of "رأس" "ra's" and "بير" "beir" in place of "بئر" "be'r" for "well" in Egyptian Arabic. Is it possible to use a consonant letter, such as /fa/, to represent hamzah? like "fain" instead of "ain" where. Additionally, it might be used in place of spoken words, such as "يد" "id" for "hand" instead of "يد" "yad". However, hamza can sometimes stay true to its original meaning, as in the sentence "he inquired" (sa'ala) "سأل", or on a word level as in Pearl, or "لو'لو" "لولو" which is frequently pronounced "lolo" "لولو" (Almusawi, 2019).

The connected or linked hamzah (Al-wasl), which only has an initial position and is unpronounced if preceded by a preposition as in باختياره (bekhteyareh, "by his choice"), is one category of the hamzah in the contemporary Standard Arabic script. The second type of hamzah is called the disconnected or unique (hamzah Al-qate), which is always uttered regardless of its place in a word, whether at the onset position "أمل" ('amal, "hope"), at the medial position "رؤيه" (ro'yah, "vision"), or at the offset position (hudu, "calm"). Hamzah may appear at the medial position of a word in one of the two ways: either as an integral part of the original root of the term as in "sa'am" "سأم" meaning "boredom" or as a result of the insertion of an inflectional morpheme to the root where hamzah initially appears at the offset position. Inflectional morphemes are placed at the final part of a root in order to denote number as in (the singular word "ensh" "إنشاء" "construction" becomes in the plural form "ensh't" "إنشاءات" meaning 'constructions'), gender (the masculine form "bada'a" "بدأ" becomes "bada'at")

“بدأت” (she started") in the feminine form, and person (the third-person singular form "fja'a" "فاجأ" becomes "faja't" "فاجأت" in the first person singular). They are referred to as incidental middle hamzah or original middle hamzah, respectively. However, the word root is kept non-linear by the placement of derivational morphemes.

The hamzah seat will be affected by the endings of the nominative, genitive, and accusative cases since short vowel marks (dammah /u/, kasrah /I/, and fathah /a/) are frequently used to indicate grammatical functions. In this regard, depending on whether it is in the genitive case system (/I/), nominative case system (/u/), or accusative case system (/a/), a word that means "his hope" has multiple hamzah forms. For instance, the written form of hamzah would appear on the /y'/ seat, which would lose its dots, on the /w'/ seat, and independently, aloof 'apart' from any seat in the provided accusative case in raj'ih (رجائه), raj'uh (رجاؤه), and raj'ah (رجاءه) (Almusawi, 2019).

Hamzah at the medial position has to be written with the same vowel movement. If the vowel sign dammah u (و) is used, as in the word "mas'ool" "مسؤول" "responsible," it shall be placed on the letter "ww." If the vowel sign is the fathah a (أ), it should go on the alif letter as in almar'ah "المرأة", "woman," as well as on the letter /y'/. When the vowel sign is kasrah (/I/) (ئ), it must be uttered like in the word "ma'il," "مائل" which means "slant." As in "bi'sa," "بئس" meaning "miserable," "sho'm," "شوم" or "nasha'tu," "نشأت" "I grew up," if the hamzah itself has a zero-vowel marker (sukun), it should be spelt in accordance with the movement of the letter of the kasrah, dammah, or fathah that precedes it. The power and caliber of the vowels surrounding the hamzah on both sides of the word are demonstrated by the hierarchy in which these possibilities are presented. The hierarchical sequence in which these possibilities are given demonstrates the strength and quality of the vowels that are close to the hamzah on both sides. Given that the kasrah vowel has the greatest impact on a word that contains hamza, the /y'/ seat is given the most consideration. (ibid.).

The word "da'l" "ضئيل" (little), for instance, hamzah is printed on a /y'/ seat because the kasrah /I/ vowel is stronger than the fathah /a/ vowel (Almusawi, 2019). in The word "fu'd" "فؤاد" (heart), hamzah is printed on the "w" seat because the sound /u/ is stronger than the sound /a/. Therefore, if either the hamzah or the letter before it lacks a pronounced vowel, i.e., does not have diacritic but a quiet movement (sukun), the seat is decided by the other vowel by default. According to the hamzah's previous vowel sound, the hamzah seat, for the following words ka's "كأس" (cup), lu'm (vileness), and dhi'b "ذئب" (wolf), is /a/, /u/, and /I/. As in the

words da'ub, "دؤوب" "tireless," or batei "بطئ", "slow," a word containing hamzah may occur with two consecutive waws or y's since the hamzah has no effect on how its surrounding consonants or long vowels are spelt (Almusawi, 2019).

It can be assumed that Arabic has a clear orthography as long as the diacritics are employed, based on what was said above regarding the grapheme-phoneme link. Due to Arabic's homography, the reader will encounter uncertainty without the diacritic symbols, but the words remain comprehensible in context. Allography and ligaturing in Arabic could be a little challenging, but with sufficient practice, the learner will quickly comprehend the various letter shapes. For both native and non-native speakers, reading can be challenging due to the assimilation in Arabic and how it impacts the grapheme-phoneme connection. Another way to put it is that assimilation is one of the key characteristics of Egyptian colloquial Arabic. It can be challenging with the "Hamza" because of the many "Alif" shapes. Therefore, one of the key goals of this research is to demonstrate academically the various kinds of Hamza and their applications. The usage of dots doesn't often lead to misunderstanding, but the use of "ي" and "ى", and "ة" "ه" may even cause native Arabs to become perplexed. The following section mainly focuses on the relationship between grapheme and phoneme in English. It concentrates on the difficulty raised from the difference between the grapheme and phoneme.

3.1 English grapheme-phoneme relationship:

As previously stated, orthography is a language's writing system. The second main focus of this study is on the English language's orthography and the link between graphemes and phonemes. The Latin alphabet used to write English has 26 letters total—21 consonants and 5 vowels. English is more unpredictable than Arabic because multiple letters can all be pronounced with the same sound. For example, the letters "c" and "s" can both be pronounced as the sound /s/ as in the words "centre" /'sentər/ and "sea" /si:/ and "c" and "k," as in the words "cattle" / kæt.əl / and "kettle" /'ketl/ respectively. In other words, a phoneme is represented by more than one grapheme. English has, according to Cherifi and Guerti (2021), about 1120 different letter combinations (graphemes). The English phonemes were split into 22 consonant phonemes and 20 vowel phonemes (Dhayef & Al-Aassam, 2020). Additionally, they attributed the English orthography's opacity to the language's large number of vowel phonemes opposed to its small number of vowel letters (a, e, I, o, and u).

3.2 Allograph:

In Arabic, allograph presented an issue, as mentioned above. There are numerous variations of the same letter in English. Allography in English is addressed in this section even though it doesn't present the same challenge in English because linking letters only appear in Arabic script, not printing (Share, 2021; Alshareef & Alshareef, 2021). Initial letters may be written in capital letters (Ahmad, Art). Additionally, the combinations of uppercase and lowercase letters can be identical (S/s), nearly identical (F/f), or seemingly unrelated (G/g, E/e) (Share, 2021).

It is apparent what constitutes an allograph and a grapheme in English, it is essential to point out that "ff" cannot be considered as an allograph of "f" even if they share the same phoneme, /f/. Consequently, there are several sorts of graphemes, including monographs, phonographs, digraphs, trigraphs, and quadgraphs. (For example, "ch" can be referred to as a grapheme or a digraph, "tch" as a grapheme or a trigraph, etc.) (Share, 2021). The following section will go into more detail about these types:

- 1- One graph or letter per phoneme is referred to as a monograph or graph (Anyagwa, n.d.; "4 grapheme types", n.d.). The /g/ phoneme in the word "gun" /gʌn/ is represented by the "g" grapheme. The phoneme /t/ in the word "tip" /tɪp/ is represented by the "t" grapheme. The phoneme /e/ in the word "end" /end/ is represented by the "e" grapheme.
- 2- A digraph is made up of two letters or graphs that each represents one phoneme (Anyagwa, n.d.; "4 grapheme types", n.d.). The digraph "ph" is pronounced similarly to the phoneme /f/ as in the word "phone" (/fəʊn/). The phoneme /m/ in the word "summer" /sʌmə/ is represented by the digraph "mm". The phoneme /i:/ in the word "sea" /si:/ is matched by the digraph "ea".
- 3- According to Anyagwa (n.d.; "4 grapheme types"), a trigraph is a composite of three graphs each representing one phoneme. The phoneme /aɪ/ found in the word "fight" /faɪt/ is matched by the trigraph "igh". The phoneme /tʃ/ in the word "watch" /wɑ:tʃ/ corresponds to the trigraph "tch". The word "edge" phoneme, /dʒ/, is matched to the trigraph "dge"'s phoneme, /edʒ/.
- 4- Quadgraph is a grouping of 4 graphs or letters that together make up a single phoneme (Anyagwa, n.d.; "4 grapheme types", n.d.). The phoneme /əʊ/ in the word "dough" /dəʊ/ is corresponding to the quadgraph "ough". The phoneme /ŋ/ in the word "tongue" /tʌŋ/ corresponds to the quadgraph "ngue". The phoneme /eɪ/ in the word

"weigh" /weɪt/ is represented by the quadgraph "eigh". The phoneme /eɪ/ in the word "straight" /streɪt/ is corresponding to the quadgraph "aigh".

3.3 Consonant phonemes:

Using the terms quality of the sound, place of articulation, and manner of articulation, Yule (2020) outlined how consonants are produced or articulated by blockage in the vocal track. The phonetic intricacies of the 24 consonant phonemes in English will not fully explained. Instead, a few instances to show how the consonant phonemes and their graphemes relate to one another in English will be given.

The graphs to which the phoneme /f/ corresponds are varied. The "f, ff" graphemes are uttered as /f/ as in words such as skiff /skɪf/, cliff /klɪf/, fat /fæt/, giraffe /dʒə'ræf/, knife /naɪf/, and fire /faɪər/. The "Ph" grapheme can be produced as "f" as in phase /feɪz/, photograph /'fəʊtəgræf/, elephant /'elɪfənt/ and paragraph /'pærəgræf/. The "Gh" graph can be uttered as "f" in words such as roughly /'rʌfli/, cough /kɒf/, enough /ɪ'nʌf/, and tough /tʌf/. The graph "gh" is silent in words such as thigh /θaɪ/ and thought /ðoʊ/. The phoneme /z/ is represented by the graphemes "z, si, s" in words such as azure /æzər/, division /dɪ'vɪʒn/ and treasure /'trezər/. With the exception of the word genre /'ʒɑ:nrə/, the phoneme /z/ never appears in the first position within a word. Because multiple graphemes correlate to the same phoneme, it is difficult to infer the sound of a word from its writing (Anyagwa, n.d.).

The voiceless palatal affricate phoneme /tʃ/ is made up of the voiceless alveolar stop /t/ and the voiceless palatal fricative /ʃ/. The two phonemes /d/ voiced alveolar stop and /z/ voiced alveolar stop combine to form the voiced palatal affricate /dʒ/ (Yule, 2020). The graphemes "ch" as in "tch" as in "watch" /wɑ:tʃ/, "tu" as in "future" /'fju:tʃər/, "chip" /tʃɪp/, and "te" as in "righteous" /'raɪtʃəs/ can all be mapped to the phoneme /tʃ/. The graphemes "j" at the beginning of the word "jam" /dʒaem/, "g" at the beginning of the word "giraffe" /dʒə'ræf/, "ge" at the end of the word "wage" /weɪdʒ/, "dge" at the end of the word "edge" /edʒ/, "di" at the middle of the word "soldier" /'soʊldʒər/, and "gg" at the middle of the

word "exaggerate" /ɪg'zædʒəreɪt/ can all correlate to the phoneme /dʒ/. The following table summarize the consonant phonemes and their graphemes.

Table 7: The 24 Consonant phonemes and their graphemes

Phoneme	IPA Symbol	Graphemes	Examples	Voiced?
1	B	b, bb	bug, bubble	Yes
2	D	d, dd, ed	dad, add, milled	Yes
3	F	f, ff, ph, gh, lf, ft	fat, cliff, phone, enough, half, often	No
4	G	g, gg, gh,gu,gue	gun, egg, ghost, guest, prologue	Yes
5	H	h, wh	hop, who	No
6	dʒ	j, ge, g, dge, di, gg	jam, wage, giraffe, edge, soldier, exaggerate	Yes
7	K	k, c, ch, cc, lk, qu ,q(u), ck, x	kit, cat, chris, accent, folk, bouquet, queen, rack, box	No
8	L	l, ll	live, well	Yes
9	M	m, mm, mb, mn, lm	man, summer, comb, column, palm	Yes
10	N	n, nn,kn, gn, pn, mn	net, funny, know, gnat, pneumatic, mnemonic	Yes
11	P	p, pp	pin, dippy	No
12	R	r, rr, wr, rh	run, carrot, wrench, rhyme	Yes
13	S	s, ss, c, sc, ps, st, ce, se	sit, less, circle, scene, psycho, listen, pace, course	No

Phoneme	IPA Symbol	Graphemes	Examples	Voiced?
14	T	t, tt, th, ed	tip, matter, thomas, ripped	No
15	V	v, f, ph, ve	vine, of, stephen, five	Yes
16	W	w, wh, u, o	wit, why, quick, choir	Yes
17	Z	z, zz, s, ss, x, ze, se	zed, buzz, his, scissors, xylophone, craze	Yes
18	ʒ	s, si, z	treasure, division, azure	Yes
19	tʃ	ch, tch, tu, te	chip, watch, future, righteous	No
20	ʃ	sh, ce, s, ci, si, ch, sci, ti	sham, ocean, sure, special, pension, machine, conscience, station	No
21	θ	th	Thongs	No
22	ð	th	Leather	Yes
23	ɒ	ng, n, ngue	ring, pink, tongue	Yes
24	J	y, i, j	you, onion, hallelujah	Yes

Note. Retrieved from *The 44 phonemes in English*. Dyslexia Reading Well. (n.d.).

3.4 Vowel Phonemes:

This section deals with the vowel phonemes in English. The link between the English grapheme and phoneme is more ambiguous and unpredictable in vowels. As previously established, only 5 vowel letters make up each of the 20 vowel phonemes (Dhayef & Al-Aassam, 2020; Alshareef & Alshareef, 2021; Siddig, et al., 2022). Two phonemes were used to combine the affricates in consonants, while three phonemes were used to combine the diphthongs and triphthongs in vowels (Yurtbai, 2018; Roach, 1989). In the part that follows, they will be explained in more detail.

Vowel production is probably voiced and involves a free airflow, according to Yule (2020). The description of which region of the tongue—front, central, or back—is high or low during the pronunciation of vowels is known as the place of articulation. It is assumed by Roach (1989) that a "pure vowel" is a vowel that doesn't glide and is constant .

According to Roach (1989), there are two primary categories of pure vowels or monophthongs: 5 long vowels (/i:/, /u:/, /ɑ:/, /ɔ:/, /ɜ:/) and seven short vowels (/ɪ/, /e/, /æ/, /ʌ/, /ɒ/, /ʊ/, /ə/). The long vowel /i:/ in a word such as "feet" /fi:t/ has the grapheme "ee" as its counterpart. In contrast to the long vowel phoneme /u:/ in the word "food" /fu:d/, the grapheme "oo" resembles the short vowel phoneme /ʊ/ in the middle of the word "foot" /fʊt/. Therefore, the length of the vowel is not determined by the quantity of graphs or letters. For instance, the phoneme /i:/ can be represented by many graphemes, such as the letters "e" and "ee" as in the words "be" /bi:/ and "bee" /bi:/ respectively, "ea" as in the word "meat" /mi:t/ and "ey" as in the word "key" /ki:/ and "oe" as in the word "phoenix" /'fi:niks/ and "ie" as in the word "grief" /gri:f/ and "eo" as in the word "people" /'pi:pl/, and "ay" as in the word "quay" /ki:/ and "i" as in the word "ski" /ski:/ and "ei" as in the word "deceive" /dɪ'si:v/(Alshareef & Alshareef, 2021). The following Table called table 8 contains more examples.

A diphthong is also a phoneme for a vowel. Roach (1989) described diphthongs as a transition or glide from a single sound to another. According to Yule (2020), the creation of diphthongs involves shifting from a vocalic position to another. The phoneme /e/ is a close-mid front and the phoneme /ɪ/ is a close front. Hence, the speaker must glide from the first sound to the second, which causes the jaw to lift or close. Roach (1989) called this process of gliding a closing diphthong.

According to Roach (1989), there are 8 diphthongs in the English language, namely, (/ɪə/, /eə/, /ʊə/, /eɪ/, /aɪ/, /ɔɪ/, /aʊ/ and /oʊ/or/əʊ/). However, Yule (2020) only mentioned five diphthongs (/eɪ/, /aɪ/, /ɔɪ/, /aʊ/, /oʊ/). The diphthong /eɪ/ in the words "bay," "maid," "pay," "filet," "eight," "gauge," "mate," "break," and "they" is represented by all of these graphemes (a, ai, ay, et, ei, au, a_e, ea, and ey). The majority of these graphemes are equivalent to different phonemes (for instance, "ey" is /i:/ in "key" but /e/ in "they"); see additional examples in table 8).

It is postulated by (Roach, 1989) that triphthongs are challenging to pronounce and distinguish, which increases the complexity and unpredictability of the grapheme-phoneme connection in English. A triphthong, according to Roach (1989), consists of three vowel sounds that the speaker smoothly transitions from

one to the next and from the next to the third. Roach (1989) also added that there are five triphthongs, namely, /aɪə/ as in the word “liar” /'laɪər/, /əʊə/ as in the word “lower” /'ləʊər/, /ɔɪə/ as in the word “loyal” /'lɔɪəl, /aʊə/ as in the word “hour” /'aʊər/ and /eɪə/ as in “player” /'pleɪər/.

A triphthong wasn't mentioned as a phoneme, although short vowels (7), long vowels (5), and diphthongs (8) are all established 20 phonemes. The suffix "er" /ər/ formed a triphthong /eɪə/ as in the word "player" /'pleɪər/, even though the grapheme "ay" in the word "play" /'pleɪ/ corresponds to the diphthong phoneme /eɪ/. Hence, the question here is that: Are triphthongs restricted to words with numerous syllables?. The answer is no, because a triphthong can occur in one or two syllables. For example, The word "hour" /'aʊər/ includes one syllable and contains a triphthong (Roach, 1989). This takes us to the second possible question being is it because of the "r" grapheme?. The answer of the previous question could be addressed by the following example. The word "poet"/'pəʊət/ comprises two syllables but no "r" and a triphthong, with the stress falling on the first syllable.

The most difficult vowel to pronounce is the short one, /ə/. According to Roach (1989), the vowel is middle (i.e., halfway between close and open) and center (i.e., halfway between front and rear), but that isn't the reason it's problematic. Although not all weak syllables contain it, according to Roach (1989), it is the most often used vowel and is connected with weak syllables.

According to Yurtbaşı (2018), triphthongs are simply prolonged diphthongs that can be created by joining two words whose initial letter is a vowel and the second begins with a vowel or by adding at the end of a diphthong one of the following sounds /ɪ/ or /ə/ . Due to the fact that both "I earn" /aɪ ɜ:n/ and "iron" /aɪərn/ have mid-central vowels, they sound very similar. Applying the connecting method to the sample phrase "fifty hours" /'fɪfti 'aʊərz/, we obtain a raw /i aʊə/ with four vowel sounds, which Yurtbaşı (2018) referred to as a "quadraphone."

Table 8: The 20 vowel phonemes and their graphemes

Phoneme	IPA Symbol	Graphemes	Examples
25	Æ	a, ai, au	cat, plaid, laugh
26	eɪ	a, ai, eigh, aigh, ay, er, et, ei, au, a_e, ea, ey	bay, maid, weigh, straight, pay, foyer, filet, eight, gauge, mate,

Phoneme	IPA Symbol	Graphemes	Examples
			break, they
27	E	e, ea, u, ie, ai, a, eo, ei, ae	end, bread, bury, friend, said, many, leopard, heifer, aesthetic
28	i:	e, ee, ea, y, ey, oe, ie, i, ei, eo, ay	be, bee, meat, lady, key, phoenix, grief, ski, deceive, people, quay
29	ɪ	i, e, o, u, ui, y, ie	it, England, women, busy, guild, gym, sieve
30	aɪ	i, y, igh, ie, uy, ye, ai, is, eigh, i_e	spider, sky, night, pie, guy, stye, aisle, island, height, kite
31	ɒ	a, ho, au, aw, ough	swan, honest, maul, slaw, fought
32	oʊ	o, oa, o_e, oe, ow, ough, eau, oo, ew	open, moat, bone, toe, sow, dough, beau, brooch, sew
33	ʊ	o, oo, u,ou	wolf, look, bush, would
34	ʌ	u, o, oo, ou	lug, monkey, blood, double
35	u:	o, oo, ew, ue, u_e, oe, ough, ui, oew, ou	who, loon, dew, blue, flute, shoe, through, fruit, manoeuvre, group
36	ɔɪ	oi, oy, uoy	join, boy, buoy
37	aʊ	ow, ou, ough	now, shout, bough
38	ə	a, er, i, ar, our, ur	about, ladder, pencil, dollar, honour, augur
39	eə ^r	air, are, ear, ere, eir, ayer	chair, dare, pear, where, their, prayer

Phoneme	IPA Symbol	Graphemes	Examples
40	ɑ:	Ar	Arm, car, star, far
41	ɜ:r	ir, er, ur, ear, or, our, yr	bird, term, burn, pearl, word, journey, myrtle
42	ɔ:	aw, a, or, oor, ore, oar, our, augh, ar, ough, au	paw, ball, fork, poor, fore, board, four, taught, war, bought, sauce
43	ɪəʳ	ear, eer, ere, ier	ear, steer, here, tier
44	ʊəʳ	ure, our	cure, tourist, sure

Note. Retrieved from *The 44 phonemes in English*. Dyslexia Reading Well. (n.d.).

3.5 Letters with Dual Purpose:

Share (2021) utilized this expression to refer to the "w" and "y" glides and the "h" as a consonant (for example, "hit" /hɪt/) or as a "diacritic" in the digraphs "ch, ph, th, sh, and wh". According to Yule (2021), the grapheme "w" is a voiced (the vocal cords are vibrating) bilabial (both lips are used to pronounce it) glide (tongue travels to or from a vowel position) consonant sound (e.g., "why" /waɪ/, "sweat" /swet/, "twilight" /'twɪlaɪt/, "white" /waɪt/). The vowel phonemes /ɔ:/, /əʊ/ and /aʊ/ (e.g., "how" /haʊ/, "now" /naʊ/ and "saw" /sɔ:/) are also corresponding to it (Munro, 2021). Additionally, it can be silent, as in "write" /raɪt/. According to Yule (2021), the grapheme "y" corresponds to the voiced palatal glide consonant phoneme /j/ (such as "you" /ju:/, "yes" /jes/, "year" /jɪr/). It is equivalent to the vowels /aɪ/ and /ɪ/ found in words such as "sky" /skaɪ/ and "ability" /ə'biləti/.

3.5.1 Silent letters:

The "w" and other English graphemes cannot be pronounced at all, as it is previously established. The silent "e" at the offset of the words and how it influences articulation were discussed by Dhayef and Al-Aassam in 2020. The vowels in "cut" /kʌt/ and "con" /kɑ:n/ are /ʌ/ and /ɑ:/, but if the grapheme "e" is

added at the offset of the abovementioned examples, it will be silent, but it will have an influence on the previous vowels in the word as in “cute” /kju:t/ and “cone” /koun/, which are /ju:/ and /ou/, which are not pronounced the same either. Many additional graphemes in English are silent, including the “gh” in “though” /ðou/; the “h” in “hour” /'aʊər/; the “b” in “comb” /koum/; the “k” in “knife” /naɪf/; the “l” in “calm” /kɑ:m/; the “n” in “autumn” /'ɔ:təm/; the “d” in “sandwich” /'sænwɪtʃ/.

3.5.2 Allophones/Allomorphs:

The allophone is a variant of a phoneme that is written in square brackets (e.g., [p^h] and [p], as in peak [p^hi:k] and speak [spi:k]), but switching them will not alter the meaning and will instead sound strange (Cao, 2022). The morpheme is the smallest meaningful element in a language that cannot be broken down further without changing its meaning (for example, the word "editors" comprises three morphemes: edit-or-s, two of which are used for meaning (edit & or) and the third is used for grammar (the plural "-s") (Cao, 2022). We will solely concentrate on the phonological morph (the various pronunciations of the morph), as the prefix allo- indicates other/different. The allomorphs [wud], [wəd], [əd] and [d] are allomorphs of the morpheme "would."

Words such as (dogs (pl. n.) /dɔ:gz/, naps (pl. n.) /naeps/, boxes (pl. n.) /bɑ:ksɪz/, sleeps(v1) /sli:ps/, plays(v1) /pleɪz/, changes(v1) /tʃeɪndʒɪz/) have two morphs: the second is a grammatical morph (-s, -es) that indicates plural in nouns and present simple form in verbs. However, these morphs are uttered in a different way in these words (i.e., /s/, /z/ and /ɪz/). It is assumed by Cao (2022) that the suffix "s" is uttered as a voiceless alveolar fricative /s/, if what comes before it is a voiceless sound such as (/t/, /f/, /tʃ/, /p/, /k/, and /ʃ/). However, it is uttered as voiced alveolar fricative /z/, if it is preceded by a voiced sound. In addition, if it is preceded by /z/, /ʒ/, /dʒ/, /s/, /ʃ/, and /tʃ/, it is uttered as /ɪz/. the allomorph is represented by such different realization of the present simple “-s” or “-es” and the plural “-s” or “-es”.

In the same vein, it is assumed by Cao (2022) that the "d" or "ed" graphemes that denote the past tense of some verbs also undergo the same phonetic alterations. When creating a normal verb's second form, we add "d" or "ed" graphemes in the last position, which have different pronunciations. The "d" grapheme is pronounced "t" when the verb ends in a voiceless sound, as in the phrases "asked" /æskt/ and "finished" /'fɪnɪʃt/. In addition, the graphemes "d" and "ed" indicating

the past tense of the verb at the offset position are uttered /d/ as in a word like “played” /pleɪd/, if they are preceded by a vowel or a voiced consonant. In words such as “noted” /'nəʊtɪd/ and “added” /ædɪd/, the grapheme is uttered "id" if the last consonant is /t/ or /d/.

3.6 Assimilation:

Assimilation in Arabic is discussed in the previous section and how it alters the connection between the grapheme and the phoneme to show how the influence of the sounds on each other might be more perplexing in any language. Progressive assimilation is the term for the alteration in the grapheme-phoneme connection in words such as "sleeps" /sli:ps/ and "plays" /pleɪz/ (Yassin, 2022). In this section, the effect and different types of assimilation in English are addressed. There are three types of assimilation in English, namely, progressive, regressive and coalescent ones.

3.6.1 Progressive Assimilation:

Progressive assimilation was defined by Yassin (2022) as the impact of a phoneme on the sound that comes after it. Plays' /s/ becomes /z/ because to the effect of the voiced /eɪ/ that comes before it. Due to the preceding voiceless /k/ in "asked" (/æskt/), the /d/ sound is converted to /t/.

3.6.2 Regressive Assimilation:

The second phoneme influences the first in assimilation that is backward, which is the inverse of progressive assimilation because the influence is from left to right rather than right to left (ibid.). Because of the influence of voiceless velar plosive /k/, the phoneme /n/ in a word such as “Think” /θɪŋk/ is inverted to the phoneme /ŋ/. Same could be applied on the following examples, Tank /tæŋk/ and Bank /baŋk/.

3.6.3 Coalescent Assimilation:

The Coalescent assimilation was characterized by Yassin (2022) as the result of the merging of two sounds. It takes place when there is a phrase containing two words

the first terminates with the phoneme /t/ or /d/ and the second word initiates with the phoneme /j/. the combination of the phoneme /t/ or /d/ and the phoneme /j/ produces novel sounds, namely, /tʃ/, /dʒ/ which are symbols of the Coalescent assimilation. The phonemes /t/ and /j/ are combined to form the third phoneme /tʃ/ in the pair of words "Not Yet" /nɒtʃet/, which were spoken after each other. In the example, "Could You" \kudʒu/, the phonemes /d/ and /j/ are combined to create a third phoneme /dʒ/.

3.7 American and British English's "t" and "d":

Another phenomenon which might lead to the difference between the grapheme and phoneme in English is the glottal stop and flap. The "t" or "tt" in the words "water" and "bottle" can be sounded as a glottal stop which is represented by [ʔ] in the British accent, while in the American accent, it classified as a flap which is represented by [ɾ] . It is believed by Yule (2020) that some learners may become confused by this difference in pronunciation and mistakenly spell "water" as "wader" .

The "r" phoneme is instead pronounced as a schwa as in "reader" /'ri:də/, a long vowel like in "star" /stɑ:/, or a diphthong like in "sure" /ʃʊə/. The "r" grapheme can occur in initial position as in the words run, reel and read, as well as at middle of create, write and wrong. It never occurs in final position in RP. Numerous phonemes make up the "t" grapheme. It can be pronounced as /t/ with an aspiration, as in "tonight", as a glottal stop, as in "button" and "bottle", or as a flap when spoken with an American accent. Additionally, in American English, it can be deleted when followed by /n/ phone, as in the words international, internet and center.

3.8 Homography:

In Arabic, homography was previously stated; it also exists in English. There are words in English that have the same spelling but are pronounced differently, such as the verb con-tract and the noun con-tract, which have different pronunciations. (Share, 2021). Additionally, how to pronounce "read" in both the present and past tenses (for example, "I read the newspaper every day" and "I read yesterday's newspaper"). The difference is that no diacritical nor stress markings are utilized in English as they would normally be.

3.9 Loanwords and Diacritics:

It is postulated by Hucko & Lacko (2018) that English is the only one of the 36 European languages that does not utilize diacritics. The only exceptions are unassimilated foreign loanwords, such as those from French (and, increasingly, Spanish, such as *piñata* /pɪ'n(j)ɑ:tə/ and *jalapeño* /halə'peɪn(j)əʊ/ , abode which is a Spanish word that ends in a /i:/ vowel without diacritics), where the diacritic here allows the pronunciation of the /j/ sound, though it is occasionally omitted from such words (Marcet et al., 2020).

The French grapheme "é"—which is pronounced /ei/ at the end of such words—affects loanwords like "cliché," "soufflé," "Café," or "résumé," as well as the word "naïve" which has an umlaut (two double dot crown), and the word *château* (Fulton, 2010). These loanwords usually appear with the diacritic that has an accent sign in English. Li-na (2016) mentioned that the Italian word "pizza" was borrowed into English, however it is not pronounced /pizə/ but rather /pi:tsə/ just like in Italian. The French loan word "façade" has an under diacritic ç which is called cedilla that modifies the pronunciation of "s" to be more emphatic.

As a result of what is mentioned above, it is apparent that there can be more than one phoneme for a given grapheme in the English alphabet, which is made even clearer by the previous tables. It is clear that some graphemes are repeated in the grapheme column together with other phonemes.

4.1 Conclusion:

It is concluded from the study at hand that, compared to English, Arabic is thought to have a more transparent writing system. The degree of transparency influences writing and reading ability. No of the degree of transparency, understanding the grapheme-phoneme link in a language might be useful when watching a foreign language film. It is assumed by Pattamadilok et al (2022) that by giving lexical clues that helped them fine-tune perceptual system, subtitles that matched speech sounds have been shown to increase second language (L2) speech comprehension. In addition, Understanding the link between the grapheme and the phoneme, according to Pattamadilok et al. (2022), can be a huge benefit for literate people since, especially in L2 learning, they are typically more susceptible to the written code than to articulatory gestures. The reason behind the transparency of the Arabic orthography is the utilization of the diacritical marks and dots in Arabic, yet even for native speakers, the language would be exceedingly opaque and challenging to understand in isolation. The Arabic orthography is now more transparent as a result, but without these symbols, the language would still be exceedingly opaque and challenging to understand without context, even for native speakers.

In Arabic, The orthography is flat and the language is naturally phonetic. The act of writing and speaking are identical. Silent letters can be found in some words. The word's silent characters can be easily pronounced. It is simple to distinguish the word's silent characters. These silent letters serve as a distinguishing feature between the term and others with the same spelling. The majority of Arabic's silent letters follow a specific pattern called qiyasi. Only a small percentage of these words, known as sima'i among Arabs, are free of patterns.

In English, Naturally, the language is not phonetic and has a complex spelling. Writing and speaking are two different things. Several words have silent letters. There are many pronunciation levels for the silent letters. It is challenging to determine which letter in a word needs to be "muted." Silent letters are used in English when words are borrowed from other languages, while others have them to conform to the language's phonological principles. In addition, the usage of diacritics in some language influences the pronunciation of these words. When these words are adopted by English, they are used or borrowed without any diacritical marks which pauses a difficulty during uttering them.

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The Writing Difficulties of the Difference between Graphemes and Phonemes in Arabic and English

Ahmed Abdelmejid Ahmed Abdelmejid Wafa

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The Writing Difficulties of the Difference between Graphemes and Phonemes in Arabic and English

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