DEPARTMENT OF ENGLISH AND GERMAN
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DEGREE IN ENGLISH STUDIES

FINAL DEGREE PROJECT

THE DEVELOPMENT OF THE VOCALIC SYSTEM OF THE ENGLISH LANGUAGE:

from Proto-Germanic to Present-Day English

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Abstract

   This dissertation focuses in the evolution of the vocalic system of English: the aim of this work is to analyze and explain why and how vowels have developed from Old English to Present-Day English. To begin with, the changes in the Indo-European and Proto-Germanic languages are concisely described, and later the changes in Old, Middle, and Modern English are more deeply analyzed until reaching the Present-Day English vowel system. Through this process and comparing studies by different expert authors in the area of linguistics, an attempt will be made to illustrate as clearly as possible what the evolution of the vowels has been and how they have become what they are today. Another main goal of this work is to analyze the changes taking into account the articulatory properties of vowels; that is, to have a general idea of the physiology of the mouth and the movement of its articulators to realize how vowels are formed by humans, which include raising or lowering and advancing or retracting the body of the tongue, rounding or not rounding the lips, and producing the movements with tense or lax gestures. Besides, different kinds of sound change are also provided to clarify how the linguistic environment affects the vowels, that is, their previous and next sounds. To reinforce and clarify the justifications of all the vowel changes, different tables and diagrams are provided classifying and showing the discussed alterations. In addition, different examples are also provided to comprehend the changes more efficiently and to compare them with words from actual English. After investigating the different phases of the English vocalic system, conclusions are drawn about the great importance of studying the vocalic system of the English language, the reasons why it has changed – which are diverse (its own internal dynamic structure and the people who speak it) –, contact with other languages, and also, the significance of researching this language to learn and interpret its history and literature. As a result, it is concluded the exceptional complication of the English vocalic system considering the formidability of interpreting its phonological development.

Key words: vowel length, vowel merger, vowel raising.

The formation of different languages and of distinct species, and the proofs that both have been developed through a gradual process, are curiously the same.

Darwin

CONTENTS

1. Historical background

The linguistic entity that we stamp with the label "English" is rooted in the ancient Indo-European family; yet, its immediate origins are bound to the subgroup Anglo-Saxon. The tribes that lived along the shores of present-day Germany, southern Denmark and the Netherlands were the main driving force of the creation of the linguistic stock of Old English, Old Frisian and some of Old Saxon. This wide conglomerate of dialects is commonly referred to as "North Sea Germanic" or "Ingvaeonic", which includes the subgroup "Anglo-Frisian": the linguistic group that English comes from. Due to the social disruption and subsequent linguistic contact that was generated by the migrations and ensuing settlement of Britain, the northern dialects developed more innovative than the rest of West Germanic (Brinton & Bergs 2017: 9-10). Without forgetting the bunch of colours and shades that the influence of the Viking languages and Latin provided to the English that is recognised nowadays.

1.1. Old English (450-1066)

The Old English[1] period lasted from the Anglo-Saxon migration around 450 CE to the beginning of the Norman rule of England. Most of the political and cultural incidents of this period had an impact on the development of the English language: predominantly, the Christianization (Latin), the Viking raids (Old Norse) and the Norman influence (French). Regardless of the lack of written records of the languages spoken in Britain before the Anglo-Saxon invasions, there is valuable information concerning the inhabitants of the islands during history: while the Irish populace spoke Gaelic Celtic (or simply Irish) – which later expanded also to Scotland –, in Great Britain the Celtic languages were from the Britannic or Brythonic branch, attested as Welsh (Cymric), Cornish and Breton. Latin became the predominant written language after the Roman conquest under Claudius in 43 AD, and with the fall of the Roman Empire in 449 CE, the Anglo-Saxon invasions by the Angles, Saxons and Jutes commenced. The influence of these tribes was radical, their way of life and language were all over the isle: as an

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[1] As Brinton and Bergs (2017:32) indicate: "the term "Old English" refers to those varieties of Germanic which were spoken in Great Britain from the Anglo-Saxon migration around 450 up until the end of the 11th century".

immediate consequence, the Seven Germanic kingdoms were formed, known as the Anglo-Saxon Heptarchy: Mercia and Northumbria, East Anglia, Wessex, Sussex, Essex and Kent. When the Angles, Saxons and Jutes settled in Britain, a new speech community started. The first changes between Germanic languages and English were in the phonological system: a modification in stressed vowels. The fact that Germanic languages seem to not be affected by those variations, suggested that they occurred between 450 and 700.

From around 600 onward, Christianization started: the Christian religion disseminated rapidly over the country because of the Irish Church and St. Augustine of Canterbury. Even so, the Germanic languages already had Latin loans previously acquired in Europe, those first loads being related to the military, trading, or everyday expressions. The vocabulary brought in with Christianization represented concepts associated to the new religion and its institutions. One of the most important contributions Latin made to Anglo-Saxon England was the alphabet, since Anglo-Saxons had a different one known as the runic alphabet[2].

In 793 the raid on the Lindisfarne monastery occurred: it was the first recognized case of extreme attacks on England by Vikings, known as the Viking Age. For the 9th century, a considerable area of England – formed by Mercia and Northumbria – was under Danish control: they established the Dukedom of Normandy. The British endured under Danish rule until 1042, when power was vested in Edward the Confessor[3]. In the North of England, the Viking linguistic influence was stronger than in the south. Nevertheless, there are only about 150 words of Scandinavian origin acknowledged in the Old English sources (Fennell 2001: 55-59).

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[2] Runic alphabet, also called futhark, writing system of uncertain origin used by Germanic peoples of northern Europe, Britain, Scandinavia, and Iceland (*Encyclopaedia Britannica*).

[3] Edward the Confessor, son of Æthelred the Unready and Emma of Normandy: he was among the last Anglo-Saxon kings of England, considered the last king of the House of Wessex (*Encyclopaedia Britannica*).

1.2. Middle English (1066-1476)

The Middle English covers the period between The Norman Conquest, executed by Northmen under the leadership of William the Conqueror[4] – who overcame King Harold at the battle of Hastings in 1066 –, and the arrival of printing in England in 1476. The Northmen, originating from Normandy, caused tremendous dislocations to the social, political, religious and linguistic fabric of the British Isles: in fact, it was a catastrophe for the English Culture. Regarding their language, it was Norman French, but in England it developed into Anglo-Norman. The language of the governing classes in England after the Norman Conquest was French, but most of the population spoke English. In 1204, Normandy was lost by King John and due to the Hundred Years' War[5], the small use of French in England was totally lost. Consequently, those whose ancestors were Normans finally became English. (Pyles & Algeo 1993: 134-136).

Regarding the social history, the establishment of towns and the social stratification commenced, and it was crucial to the standardization of the English language. The feudal system began to disappear, and the land-owning men began to develop into merchant traders and guildsmen; this new class involved large-free holders, tenants, lower nobles and prominent administrators who obtained freedom from feudal control and conceived power established on economic and political opportunity (Fennell 2001: 96-97). In short, the Middle English period began when French became the second language in Great Britain; therefore, Middle English shows influences from French. A large amount of French words became part of the English vocabulary and has remained to this day.

1.3. Early Modern English (1476-1776)

The Early Modern English (EME henceforth) period was a radical economic, political, social and technological change in Britain that transformed the functioning of the world and with it the English language. England became a protestant country after Henry VIII dissolved the monasteries in 1536, and the monarch became the head of the Church of England. By 1539 every church had an English translation of the Bible, what

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[4] William the Conqueror (c. 1028-1087), was the first Norman King of England (*Encyclopedia Britannica*).

[5] The Hundred Years' War was a series of conflicts from 1337 to 1453, waged between the House of Plantagenet, rulers of England and the French House of Valois, over the right to rule the Kingdom of France (*Encyclopedia Britannica*).

marked a significant breakthrough in the history of the use of English in the British Isles. In 1559, with Elizabeth – the daughter of Henry VIII – in authority, the Act of Supremacy restored the laws of her father and the centrality of Protestantism in England, regardless of Mary Tudor's attempts to reestablish Catholicism.

The EME period encloses the pinnacle of English literary achievement with the period of William Shakespeare (1564-1616). The Elizabethan Age was also the age of colonial expansionism: part of South America, North America and India was covered by British expansionism. After this, the reign of James I took place, with historical events of great importance, especially the King James Version of the Bible: its objective was to give importance to the king and criticize the Clergy; it was supposed to be a "more politically acceptable version" (Fennell 2001: 135-137). This Bible also served as an instrument of standardization and to demonstrate the great potential of English.

Although British colonialism continued to expand, the situation in Great Britain was not great: there was a big domestic crisis, and this provoked the Civil Wars of 1642-1646 and 1648 simultaneously with the execution of Charles I. After the Oliver Cromwell[6] period, the reign of Charles II was restored (1660), extending territorial belongings into Africa. In 1707 the Union of England and Scotland known as Great Britain was created; afterwards, under the reign of George I, Ireland united with Great Britain too, and in consequence of these unions, English underwent important changes. The end of the Early Modern English Period was indicated by the separation of America from Britain: the conflict between the two territories led to the American Revolutionary War (1775-1783), and eventually, Britain recognized the free status of America in 1783. (Fennell 2001:136-138).

In summary, Early Modern English coincides with the emancipation from French and Latin; nevertheless, Latin had a great influence in this process: it was used to write most of the scientific works and there was a great borrowing of its words into English because of the observed gaps in the language (Fennell 2001: 148-149). As Early modern English was the period of the Renaissance, the modern languages of Europe were being promoted as a medium of learning, and English was finally accepted.

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[6] Oliver Cromwell, (1599-1658), English soldier and statesman, who led parliamentary forces in the English Civil Wars and was lord protector of England, Scotland, and Ireland (1653–58) during the republican Commonwealth (*Encyclopaedia Britaynnica*).

1.4. Present Day English (1776-)

The Present Day English (PDE henceforth) period is characterized by revolutions, wars and imperialism. Concerning politics, various revolutions modified the form society worked: on the one hand, the French Revolution emphasized fraternity and equality, and on the other hand, the American Revolution emphasized human rights and democracy, which had severe consequences in the world. Then, the Industrial Revolution developed the western and provoked extreme changes in society; meanwhile, the British Empire continued expanding. In the 20th century, the First and Second World Wars took place, bringing about profoundest economic, social, political and cultural changes. After WWII, the British Empire declined dramatically; in fact, the most significant change was the increase of the power of the United States all over the world, specifically since the breakdown of the Soviet Union in 1991, they operated as the world's ruler. Nevertheless, nowadays they are being challenged by the European Union. Lastly, the Technological Revolution had a significant effect too, both in society and in the English language. There was also an Agricultural Revolution in which farming techniques and animal husbandry developed: the idea of the improvement was to eliminate hunger caused by the wars from Europe. Due to this development, there was not much employment in farming; people moved to work in the industry and the population in the country decreased drastically. All these changes made London become the center of Great Britain, concentrating all the political and economic power there; this also affected the English language, since it was gradually standardized throughout the capital (Fennell 2001: 169-172).

2.   Vowels: features and evolution

From an articulatory point of view, "vowels are made by positioning the vocal tract in a particular configuration, and they have at most only a slight narrowing and allow air to flow freely through the oral cavity" (The Ohio State University 2016:44). The speech stream is distributed by phoneticians into two main categories: segments and suprasegmentals; vowels are units within segments. The articulators (the tongue, lips and teeth, the alveolar ridge, the palate, the velum, and the nasal cavity) are not in contact and the mouth is open; also, various vowels are produced by modifying the shape and position of the tongue. Vowels are often divided into two categories: monophthongs and diphthongs; monophthongs are simple vowels composed of a single configuration of the vocal tract, and diphthongs are complex vowels composed of a sequence of two different configurations.

Vowels are the most sonorant and audible sounds of speech; they are almost always voiced, and they normally perform as syllable nuclei – the consonants that enclose them frequently depend on the vowel for their audibility –. There are four principal ways in which speakers can change the shape of the vocal tract and the vowel quality: raising or lowering the body of the tongue, advancing or retracting the body of the tongue, rounding or not the lips, and making these movements with tense or lax gestures.

Regarding the tongue height, there are different degrees: high, mid, and low. The high vowels for English are [i], [ɪ], [u] and [ʊ], which are made with the front of the mouth less open and the tongue body raised. Low vowels [æ] and [ɑ] are pronounced with the front of the mouth open and the tongue lowered. Mid vowels [ʌ], [ɔ] and [ɛ] are produced with an intermediate tongue height. Concerning tongue advancement, the tongue can be moved forward or pulled back within the oral cavity. For the front monophthongs [i], [ɪ], [ɛ] and [æ] the tongue is advanced forward, and for the monophthongs [u], [ʊ], [ɔ] and [ɑ] the tongue is retracted. For the central vowels [ʌ] and [ə] the tongue does not require neither advancement nor retraction.

The term "rounding" refers to whether the lips are rounded during the articulation or not. English has three rounded monophthongs – [u], [ʊ] and [ɔ] –, and all the other monophthongs are unrounded. Finally, with reference to tenseness, tense vowels have more extreme positions of the tongue and/or the lips than lax vowels. Tense vowels as [i]

and [u] need a sharper tongue gesture of raising, lowering, advancing or retracting in order to get to the periphery of the possible vowel space. Lax vowels like [ɪ] and [ʊ] are not peripheral to the degree that tense vowels are. (The Ohio State University 2016: 58-61).

2.1. From Indo-European to Proto-Germanic vowels

As is already known, the roots of English derive from pre-historic times. Due to different sociolinguistic factors, the Indo-European languages separated and developed in different languages such as Germanic, which will be analyzed below (Fennell 2001: 49). To start with, it must be clarified that for Indo-European the following system of short vowels can be reconstructed:

$$/i/ \qquad\qquad\qquad /u/$$
$$/e/ \quad /ə/ \quad /o/$$
$$/a/$$

Figure 2.1.1 Indo-European short-vowel system (Fennell 2001: 40)

The vowels /a/, /e/, /i/, /o/ and /u/ were either long or short, and the system had the diphthongs /ei/, /ai/, /oi/, /eu/, /au/ and /ou/ composed by mid and low vowels with front or back glide.

2.1.1. Short and long vowels

During the development from Indo-European to Germanic, short vowels suffered the following changes: /o/ and /a/ merged into /a/, leaving one vowel less in Germanic. In a second phase, /i/ and /u/ could be realized as /e/ and /o/ when followed by an open vowel (/a, e, o/), as can be also seen in German. For example: *gold* from *golda* but *guild* from *guldi-*, German *gold* vs. *gülden* fy. Then, IE /ei/ simplified to Germanic [i:], so that Germanic kept three diphthongs. This is the resulting system of short vowel phonemes:

$$/i/ \qquad\qquad\qquad /u/$$
$$/e/$$
$$/a/$$

Figure 2.1.2 Germanic short vowel system

The Indo-European long vowels can be reconstructed as following:
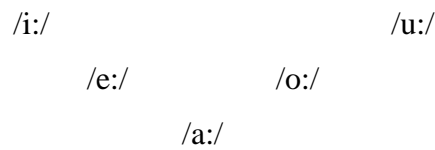
/i:/ /u:/

/e:/ /o:/

/a:/

Figure 2.1.3 Indo-European long vowel system

Concerning long vowels, [a:] and [o:] merged into [o:] and IE [e:] moved downward toward [æ:]. The Proto-Germanic long vowel system was as following:

/i:/ /u:/

/e:/ /o:/

/æ:/

Figure 2.1.4 Proto-Germanic long vowel system (Brinton & Bergs 2017: 13)

To sum up, the vowel system of Germanic can be reconstructed as follows:

Non-syllabic[7]	Short	Long	Trimoric	Diphthongs
j	i e	ī ē	ē	eu (~iu), ai, au
	a	ā		
w	u	ū ō	ō̄	

Figure 2.1.5 The vocalic system of Proto-Germanic (Ringe 2006: 214)

Proto-Germanic vocalics had automatic alternations: in unstressed syllables, underlying /e/ was raised to /i/. (Ringe 2006: 128-145).

2.1.2. Ablaut

According to Ringe (2006), ablaut is defined as a system in which vowels derive from other specific vowels by multiple phonological rules, "which had generally been

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[7] Non-syllabic or semivowels are sounds produced in the same manner as vowels but are used and perceived as consonants (*Encyclopaedia Britannica*).

morphologized to a greater or lesser extent" (Ringe 2006: 10). In PIE, where the English ablaut system originated, the underlying vowels were /e/ and /o/ (later in Germanic, /o/ changed to /a/). In the ablaut system, the alternants of each series are named "ablaut grades": the vowels are separated by grades, called "e-grade", "o-grade", "zero grade", and so on (Ringe 2006: 10-11). Other ablaut examples regarding PIE phonological rules would be the following: depending on whether the syllable is strong or weak, the vowel will change. Some ablauting nouns had the /o/ vowel in the root syllable when it is a strong case (the nominative, accusative, and vocative), but /e/ or /ø/ in the weak cases. For example: pod-ped *foot* and wodr-uden *water*. The ablaut pattern of the "thematic vowel" was remarkable: it underwent zero-grade rule only when followed by some derivational suffixes (for example -*yó*-, which formed adjectives from nouns). Furthermore, the e- and o-grades of the thematic vowel are conditioned differently in verbs and in nominals (Ringe 2006: 10-11). Barbara A. Fennell (2001) describes ablaut or apophony as an extensive vowel gradation system, in which changes in tense and number within paradigms and parts of speech were implied (Fennel 2001: 40).

This ablaut system of Indo-European was inherited by Proto-Germanic language and it was also well preserved in the older attested individual languages, cf. e.g. Greek *igo*: *say* vs. *igos*: *word*, etc.; it did not survive in the English nominal declension, but there are still some examples in the verbal system of Present-Day English: *rise-rose-risen*, *sing-sang-sung* and *foot-fee*. The effect of this system can be also seen in languages like Latin -*facio-fe:ci*-, and Spanish -*hago-hice*-.

2.2. *The Vowels of Old English*

The Old English period took place from the Anglo-Saxon migration around 450 CE to the beginning of the Norman rule of England. The Old English language was influenced by most of the political and cultural events of this period, and the vocalic changes analyzed below were mainly affected by the following languages: Latin, Old Norse, and French.

2.2.1. Vocalic Changes from Germanic to Old English

From Common Germanic to Old English, there were four primary changes: regarding the place of articulation: [ɑ] underwent fronting and changed to [æ]; [ɑi] underwent

monophthongization and changed to [ā]; then, the diphthong [ɑu] suffered a change to [ēa], which was very unusual since the resulting sound was dissimilar to the original; finally, [eu] underwent a lowering of the second element and changed to [ēo].

Germanic	Old English
ɑ	æ
ɑi	ā
ɑu	ēa
Eu	ēo

Figure 2.2.1 Vocalic changes from Germanic to Old English (Fennel 2001: 62)

On the other hand, three other types of change took place: breaking, back mutation and front mutation. Front mutation was the most significant one, often referred to as i-umlaut or i/j mutation: "if a stressed syllable was followed by an unstressed syllable containing [i] or [j], the vowel of the stressed syllable was fronted or raised" (Fennell 2001: 62). After the modification, the original vowels [i] or [j] disappeared or changed to [ə], written /e/; as in *mu:siz > my:s* "mice" and *bankiz > benc* "bench".

2.2.2. Monophthongs

In Old English, there were 14 full vowel sounds plus schwa and four diphthongs, represented in the next diagram by Fennell (2001):
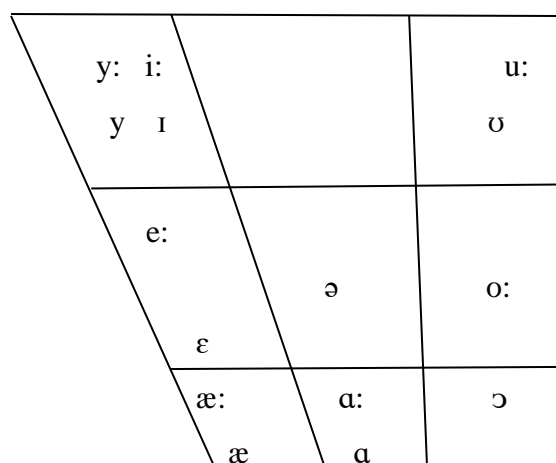

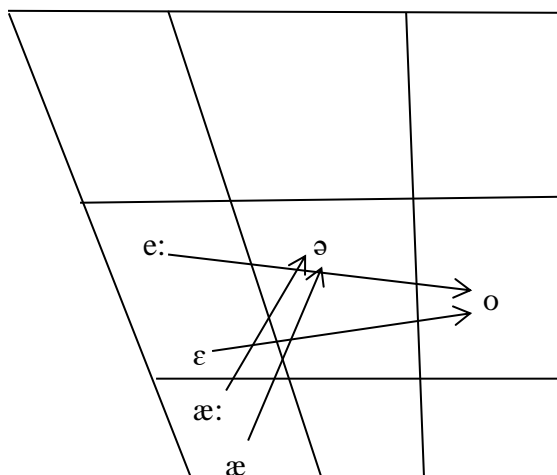Figure 2.2.2 Old English monophthongs (Fennell 2001: 63)

Figure 2.2.3 Old English diphthongs (Fennell 2001: 63)

Old English had high front rounded vowels, and the diphthongs were two backing diphthongs [eo] and [ɛo] and two rising diphthongs [æ:ə] and [æə]. Concerning the length of the vowels, according to Pyles and Algeo (1993: 103) the short vowels were [ɛ], [ɪ], [ɔ] and [ʊ].

This would be the classification of late Old English vowels according to Donka Minkova (2014:151):

		Short vowels				Long vowels			Diphthongs
		Front		Central	Back	Front		Back	
		Unround	Round			Unround	Round		
High	Upper					iː	yː	uː	iə
	Lower	ɪ	Y	ə	ʊ				ej
Mid	Upper					eː		oː	eə
	Lower	ɛ			ɔ				æj
Low		æ		ɑ		æː		ɒː	æə

Figure 2.2.4 The classification of late Old English vowels (Minkova 2014: 151)

2.2.3. Diphthongs

The diphthongs [iə], [eə] and [æə] were significant for the phonology of Germanic and Old English. The single vowel-letters in OE often denoted syllable peaks; then, /i/ and /y/ were frequently graphic variants; [æ] and [ɑ] had an ambiguous phonemic status

because they were in complementary distribution[8], "they were both reflexes of West Germanic [a], which was raised to [æ] in OE unless it was followed by a nasal, [w], or a back vowel in the following syllable" (Minkova 2014: 155-156).

The following diagraph by Minkova (2014) represents the spelling-pronunciation correspondences of Old English.

Digraph	Value		Example
	Early	*Late*	
<ēa>	æʊ	æə	*strēam* 'stream'
<ea>	æᵊ	æ	*heall* 'hall'
<ēo>	eʊ	eə	*sēon* 'to see'
<eo>	ɛᵊ	ɛ	*ġeolu* 'yellow'
<īe>	iʊ	iə, iː	*(ġe)līefan* 'to believe'
<ie>	ɪᵊ	ɪ	*ġiefan* 'to give'

Figure 2.2.5 The spelling-pronunciation correspondences of Old English (Minkova 2014: 156)

2.3. The vowels of Middle English

The Middle English period began when French became the second language in Great Britain due to the Norman Conquest, and English suffered several changes. For this reason, some of the vocalic changes below were influenced by the French language.

2.3.1. Monophthongs

Middle English had influence from the Norse-speaker invaders and from French – a lot of French words became part of the English vocabulary –. Concerning the vocalic system, Middle English had the following properties: first, it regularly applied double letters to denote vowel length, specifically /oo/ and /ee/. One of the vowel sounds indicated by Middle English /ee/ was generally written /ea/ during the sixteenth century;

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[8] Complementary distribution: the occurrence of sounds in a language such that they are never found in the same phonetic environment. Sounds that are in complementary distribution are allophones of the same phoneme (The Ohio State University 2016: 693).

for the other sound /ee/ was kept, alongside /ie/ and, less frequently, /ei/ spellings that were also used to some extent in Middle English.

On the contrary, /oo/ was used in later Middle English for the long low-back rounded vowel [ɔ:] (from Old English long /ɑ/) and for the continuation of Old English long /o/. In consequence, *rood* "rode" – OE [rɑ:d] – and *rood* "rood, cross" – OE [ro:d] – were written with the same vowel symbols (Pyles & Algeo 1993:139). Then, final unstressed /e/ after a single consonant signified vowel length too: *fode* "food" and *fede* "to feed". This will match with the "silent *e*" of Modern English, as in *phase*, *mete*, *site*, *vote*, and *rule*. In addition, in some places like the North of England, /i/ was commonly employed following a vowel to signal that it was long, visible in the next examples: *raid* (from OE *ra:d*) and Scots *guid* "good" (Pyles & Algeos 1993:140).

Regarding short /u/, if /m/, /n/, and /u/ were contiguous, it was written /o/. The Middle English words *sone* "son" and *sonne* "sun" had the specific vowel sound [u] of Old English *sunu* and *sunne*. /o/ for /u/ still appears in Modern English words like *tongue* (OE *tunge*) and *honey* (OE *hunig)*. In the 14th century, English long /u/ was illustrated by the French spelling /ou/, as in *hous* (OE [hu:s]). Preceding a vowel, the /u/ of the diagraph /ou/ was sometimes misinterpreted as /v/, so, in order to prevent a confusion, /u/ was doubled in that position: it was written /uu/ and later /w/. Thereafter, /y/ was written for long /i/.

With respect to the pronunciation of vowels, there were numerous changes too, but the Old English long vowel sounds /e/, /i/, /o/, and /u/ stayed unaltered in Middle English (the spelling changed, though). Pyles & Algeo (1993: 145) present it with the next examples: Old English *fēt* – Middle English *fēt, feet* "feet"; OE *rīdan* – ME *rīden, ry:den* "to ride"; OE *fōda* – ME *fōde, foode* "food"; OE *hūs* – ME *hōūs* "house". On the other hand, most short vowels of OE stressed syllables (a, e, i, o, u) remain unmodified, like in OE *catte > cat; bedde > bed; scip > ship*; *folc > folk*; *full > ful* (Fennell 2001: 98).

2.3.2. Diphthongs

Diphthongs in Middle English suffered radical changes: the old diphthongs disappeared, and new ones developed: [aɪ, eɪ, au, ɔu, ɛu, ɪu, ɔɪ, uɪ]. The Old English diphthongs /ēɑ/ and /ēo/ underwent monophthongization: they became [ɛ:] in most parts of England – written *ē* –. So, Old English *leaf* developed in ME [lɛ:f] "leaf" and *sēon* in

[se:n] "to see". The short diphthongs /ea/ and /eo/ became /a/ and /e/, from Old English *geaf* and *heorte* to Middle English *yaf* "gave" and *herte* "heart" (Pyles & Algeo 1993: 147).

In consequence of the vocalization of /g/ to /i/ after front vowels and the development of an /i/-glide between a front vowel and Old English /h/, the diphthongs [aɪ] and [eɪ] appeared. From OE *weg* to ME *wey,* and from OE *ehta* to ME *eighte* "eighte"; examples by Pyles and Algeo (1993). Later, these two diphthongs merged into [aɪ], which can be demonstrated thanks to Chaucer, who rimed *day* and *wey*.

The new diphthongs [au], [ɔu], [ɛu] and [ɪu] developed because of the following sources. First, the vocalization of /g/ to /u/ after back vowels: OE *sagu* to ME *sawe* "saw". Also, the development of a /u/-glide between a back vowel and Old English /h/, OE *brohte* to ME *brought* "brought". Later, /w/ after a vowel became a /u/-glide, from OE *nīwe* to ME *newe* "new" and from OE *læ:wede* to ME *lewed* "unlearned". French brought another two diphthongs to Middle English: [ɔɪ] as in *joie* "joy" and [uɪ] as in *poisen* "to poison".

To sum up, based on Algeo 2010, the new ME diphthongs developed as following: the diphthongs <oi> [ɔɪ] and <oy> [ʊɪ] were borrowed from French; then, the new diphthongs [æɪ], [aʊ], [ɔʊ], [ɛʊ] and [ɪʊ] emerged because of different vocalisations and breakings (Algeo 2010: 125).

2.3.3. Qualitative and quantitative changes

Concisely, the most significant qualitative changes affecting Old English stressed monophthongs and diphthongs were the following: first, the unrounding of [ʏ] and [y:] to [ɪ] and [i:]; for example, OE *hyll* [hyll] > ME *hyll, hill* [hɪl(l)]. Another change was the æ/ɑ Merger, in which [æ] and [ɑ] merged into [a], as in OE *bæc* [bæk] > ME *bac(c), bak(k), back* [bak]. The next change was the raising of [æ:] and [ɑ:], to [ɛ:] and [ɔ:], for example OE *clæ:ne* [klæ:nɛ] > ME *clene* [klɛ:n(ə)]. The last change was the monophthongisation of the OE diphthongs, in which diphthongs [ɛə], [e:ə], [æə] and [æ:ə] became [ɛ], [e:], [æ] and [æ:], as in OE *heorte* [hɛərtɛ] > ME *herte* [hɛrt(ə)], OE *knēo* [kne:ə] > ME *kne, knee* [kne:], OE *sceall* [ʃæəll] > ME *scal(l)* [ʃal(l)], and OE *lēaf* [læ:əf] > ME *lef* [læ:f]. In the case of OE unstressed vowels, the changes were simpler: unstressed [ɛ, ɑ, ɔ, ʊ] became [ə]; this change is called a weakening of the vowel, and as the merging

into schwa affected all four vowels, it is referred to as the levelling of unstressed vowels. This change happened fast in the case of OE inflectional endings (Algeo 2010: 123-125).

In addition to the qualitative vowel changes, Middle English had also significant quantitative changes[9]. In late Old English, before /mb/, /nd/, /ld/, /rd/, and /rð/ short vowels were lengthened. But in Middle English, this lengthening maintained only in /i/ and /o/ before /mb/ (*clīmben* "to climb", *comb* "comb"). Also, in /i/ and /u/ before /nd/ (*bīnden* "to bind" and *bōūnden* "bound"), and normally before /ld/ (*ōld* "old" and *mīlde* "mild"); nevertheless, some vowels were re-shortened afterwards. On the other hand, if there was another consonant after the mentioned sequences, lengthening did not happen.

After the lengthening processes just mentioned, short /a/, /e/, and /o/ were lengthened when they were in open syllables[10], as in *bāken* (OE bacan) "to bake". In the case of short /i/ (/y/) and /u/, apart from lengthening, they also underwent a qualitative change: /i/ (/y/) became /ē/ (from OE *yvel* to ME *ēvel* "evil"), and /u/ became /ō/ (from OE *wudu* to ME *wōde* "wood"). Also, long vowels followed by consonant sequences – doubled consonants – were shortened (except the previously mentioned /mb/, /nd/, /ld/, /rd/ and /rð/). Some examples from Pyles and Algeo (1993): from OE *cēpte* to ME *kepte* "kept", and from OE *fīftig* to ME *fifty*. Vowels in unstressed syllables and short word without stress (from OE /ān/ to ME /an/ "one") were also shortened. Finally, shortening also occurred frequently before two unstressed syllables, as in *Christendom (Christ)* and *wilderness (wild)* (Pyles & Algeo 1993: 149-150).

One of the most significant changes was the *Merging of Unstressed Vowels*. The vowels /a/, /o/ and /u/ fell to /e/ in unstressed syllables, all finally becoming [ə]: from OE *lama* to ME *lame* "lame", from OE *nacod* to ME *naked* "naked", and from OE *medu* to ME *mēde* "liquor". Lastly, the *Loss of Schwa in Final Syllables* occurred: the merged final /e/ [ə] was slowly lost in most places. Nevertheless, even when it was not pronounced anymore, several words continued to be spelled with /e/; some words obtained an optional inorganic /e/ in spelling and pronunciation. There was a scribal /e/ too, added to the spelling to fill out a short line for example. Nonfinal unstressed *e* was finally lost in the inflectional ending /es/, except after some sibilants. In some places, the /e/ of the ending /eð/ for the third person singular of the present indicative of verbs was

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[9] Quantitative changes: changes in the length of vowels.

[10] Open syllables: syllables that have a vowel at the end.

normally lost. Eventually, the vowel sound in /ed/ remained until the fifteenth century, and it has not yet disappeared in some forms.

In short, regarding the lengthening and shortening of vowels in ME, the most important changes to take into account are the following: the *Pre-Cluster Lengthening*, in which vowels were lengthened before specific consonant sequences (*mb, nd, ld*), and *Open Syllable Lengthening* in which vowels were lengthened in open syllables. On the other hand, the *Pre-Cluster Shortening* in which vowels were shortened in closed syllables before two or more consonants; then *Shortening* (and weakening and loss sometimes) in unstressed syllables; and finally, *Trisyllabic Shortening*, where vowels were shortened in a syllable followed by two unaccented syllables (Algeo 1982).

According to Fennell (2001), it must be remarked that "where in OE the quantity distinction was clearly present, i.e. where there was a length distinction between long and short vowels, in ME this develops into a qualitative distinction: long vowels are more tense and short vowels more lax; there is no significant distinction in actual quantity anymore." (Fennell 2001:100).

The following table is a summary of the changes from Old English to Middle English, based on Barbara A. Fennell (2001):

Sounds		Examples		Meaning
OE	ME	OE	ME	PDE
[ɑ:]	[ɔ:]	ban [bɑ:n]	bon [bɔ:n]	bone
[æ]	[ɑ]	þæt [ðæt]	that [ðɑt]	that
[æ:]	[ɛ:]	sæ [sæ:]	se [sɛ:]	sea
[y]	[ɪ]	synn [syn]	sinne [sɪnə]	sin
[y:]	[i:]	hydan [hy:dɑn]	hiden [hi:dən]	hide
[æə]	[ɑ]	hearm [hæərm]	harm [hɑrm]	harm
[æ:ə]	[ɛ:]	stream [stræ:əm]	streme [strɛ:mə]	stream
[ɛo]	[ɛ]	heofon [hɛovɔn]	heven [hɛvən]	heaven
[e:o]	[e:]	beon [be:on]	ben [be:n]	be/are

Figure 2.3.1: Summary Table of Vowel Changes from Old to Middle English (Fennell 2001:100)

Source	New	OE	ME	Meaning
ɑ + w	ɑʊ	clawu [klɑwʊ]	clawe [klɑʊə]	claw
ɑ + ɣ	ɑʊ	gnagan [gna:ɣan]	gnawe [gnaʊə]	gnaw
æ + j	ɛɪ	dæg [dæj]	dai [dɛɪ]	day
ɛ + j	ɛɪ	weg [wɛj]	wei [wɛɪ]	way
ɛ: + w	ɛʊ	neawe [nɛ:wə]	newe [neʊə]	new
i: + w	iʊ	stiweard	steward [stɪʊɑrd]	steward
ɔ: + w	oʊ	[sti:wæəerd]	growen [groʊən]	grow
ɔ + ɣ	oʊ	growan [gro:wan]	bowe [boʊə]	bow
ɑ: + ɣ	oʊ	boga [bɔɣa]	owen [oʊən]	owe
OFr	ɔɪ	agan [ɑ:ɣan]	ME joie	joy
		OFr joie		

Figure 2.3.2: The Formation of Middle English Diphthongs (Fennell 2001:100)

2.4. The Vowels of Early Modern English

The Early Modern English period suffered great political, economic, technological and social changes which transformed the English language. This period co-occurred with the release from French and Latin, and English gained many characteristics from these languages while becoming independent and a stronger language. The vowel changes of this period have been the most remarkable in the history of English as will be seen below.

2.4.1. Short Vowels

The 15th century was the most significant period for English phonology because it suffered more important phonological changes than in any century before. Despite that, the spelling was preserved and stereotyped. Many printers of this age based their spelling on the method of the medieval manuscripts imitating William Caxton[11], and they had a great influence on English spelling. On account of that, the quality of the long vowels changed, but the graphic representation was the same as in Middle English. (Pyles & Algeo 1993:165).

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[11] William Caxton, (born *c.* 1422, Kent, England—died 1491, London), the first English printer, who, as a translator and publisher, exerted an important influence on English literature (*Encyclopaedia Britannica*).tn

Regarding short vowels, the high front [ɪ] remained unmodified; nevertheless, it has different allophonic realizations depending on the phonetic environment, for instance, if the vowel is stressed or unstressed, the realization will be different. The short vowel [ɛ] also continued stable. On the other hand, the vowel /a/ (allophones [a] ~ [æ] and maybe [ɑ]) suffered more phonotactic changes: there was a raising from [a] to [æ]. Another development was the one of ME [ɔ] which was lowered to [ɒ] and unrounded to [ɑ]; sometimes, it could also result in further fronting to [a]. Finally, concerning the short close vowel [ʊ], it was unrounded, lowered and centralized, resulting in the low-mid back unrounded vowel [ʌ] (Minkova 2014:236-248). Nevertheless, according to Pyles & Algeo (1993), the latter vowel [u] was unrounded and shifted to [ə]. It is important to have on mind that vowels also changed depending on the geographical territory. The next table represents the changes of short vowels (Pyles & Algeo 1993: 174):

LATE MIDDLE ENGLISH	EARLY MODERN ENGLISH
[a] as in *that*	[æ]
[ɛ] as in *bed*	No change
[ɪ] as in *in*	No change
[ɔ] as in *on*, *odd*	[ə]

Figure 2.4.1 The changes of short vowels from LME to EME (Pyles & Algeo 1993: 174)

2.4.2. The Great Vowel Shift

The Great Vowel Shift was "the most emblematic of all phonological changes in the history of English" (Minkova 2014:248). It is important to mention that English is the only European language that refers to the vowel letters differently from the values attributed to them in Latin. This *shift* is described as a "chain shift", and it is defined as a general raising of all long vowels except the two high vowels that could not be raised to a greater extent [i:] and [u:] (these were diphthongized into [ai] and [au]), as Minkova cites in her work (Minkova 2014: 251). Throughout history, many different theories have been studied in relation to the Great Vowel Shift. This important change will then be analyzed chronologically, based on Minkova's (2014) paperwork.

The raising of [eː] and [oː] and the diphthongization of [iː] and [uː] began concurrently in the thirteenth century. However, the outset of the shift must be dated to the fourteenth century; the high and the upper-mid long vowels [iː], [uː], [eː] and [oː] were the leading vowels of the Great Vowel Shift. Also, according to different studies, numerous years passed between the various changes; in fact, the "peak" of the shifting was in the middle of the seventeenth century. Donka Minkova (2014) divides the "shift" into two different processes: the GVS (c. 1400-1550) and the Low-vowel changes (c.1550).

To begin with, ME high vowels [iː] and [uː] were diphthongized to [əɪ] and [əʊ] (these could be represented in different ways depending on the geographical location). Regarding the first one, [ij] and [iː] were already treated as allophones in late OE: [ij] can be placed as the principal allophone long high front vowel [iː] in ME. In the case of [uː], the process was similar, since in OE [uw] was an allophone of [uː]. These procedures can be represented as the following (Minkova 2014: 258):

[ij]   [uw]

[ij] → [əj]   [əw]   [uw]

[iː]   ↓   ↓   [uː]

[ʌj]   [ʌw]
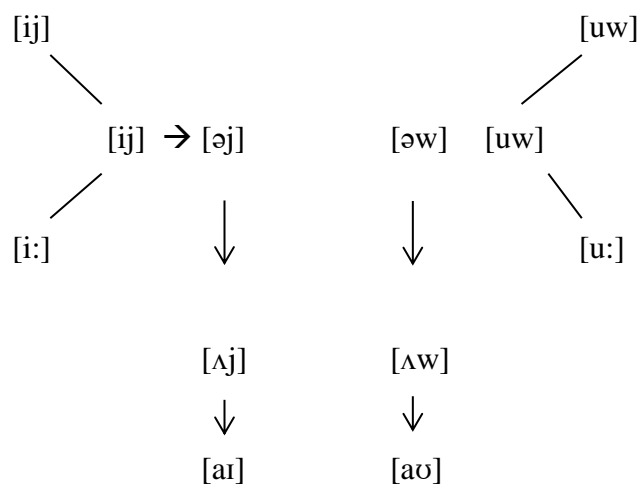
↓   ↓

[aɪ]   [aʊ]

Figure 2.4.2 The mechanism of high-vowel shifting in ME (Minkova 2014: 258)

Simultaneously, the upper-mid long vowels [eː] and [oː] were raised, becoming more comparable to [iː] and [uː]. The reason of this raising was that the earlier diphthongization of [iː] and [uː] "left two gaps" in the high-front and high-back positions and endured the raising of the upper-mid vowels. For the purpose of explaining in a clearer what has just been mentioned, Minkova (2014) provides the next diagram:

[ij]   [uw]

[ij] → [əj]   [əw] [uw]

[i:]   ↓   ↓   [u:]

↑   [ʌj]   [ʌw]   ↑
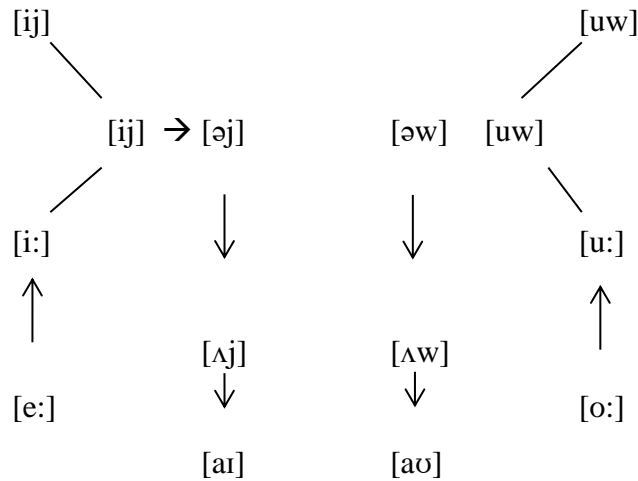
[e:]   ↓   ↓   [o:]

[aɪ]   [aʊ]

Figure 2.4.3 The mechanism of high- and mid-vowel shifting in ME (Minkova 2014: 260)

The other long-vowel changes entail ME [ɛ:], [æ:], [a:] and [ɔ:]. First, the lower-mid front [ɛ:] and the lower-mid back [ɔ:] did not develop in a parallel process. The vowel [ɛ:] was raised to [e:]; the merger progressed by degrees, and it can be exemplified in word-final positions: *se(e): me.* (Minkova 2014: 261). Regarding the vowel [æ:], its complete process would be the following: [æ:] ~ [ɛ:] ~ [e:] ~ [eɪ]. It raised and merged, the same as the vowel [ɔ:] with the diphthong [oʊ]. Minkova (2014) represents this with the next figure:

[æj] ~ [ɛj] ~ [ej]   [ɔw] ~ [ow]
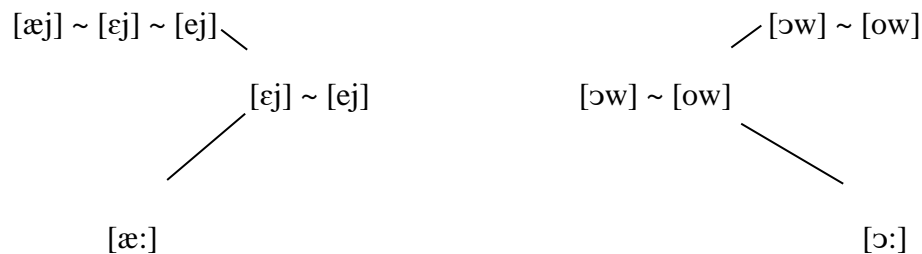
[ɛj] ~ [ej]   [ɔw] ~ [ow]

[æ:]   [ɔ:]

Figure 2.4.4 Low and lower-mid vowel mergers with pre-existing diphthongs in late ME (Minkova 2014: 263)

Concerning the vowel [a:], it raised to [æ:], and the history of ME [ɔ:] is comparable. The vowel [ɔ:] raised to [o:], but it seemed more advanced in word-final position. As mentioned above, the vowel [ɔ:] was also merged with the diphthong [oʊ]. In other words, the *Great Vowel Shift* underwent raising or diphthongization and mergers with the pre-existing diphthongs. Minkova (2014) provides the next figure summarizing the major long-vowel changes in ME and EME:
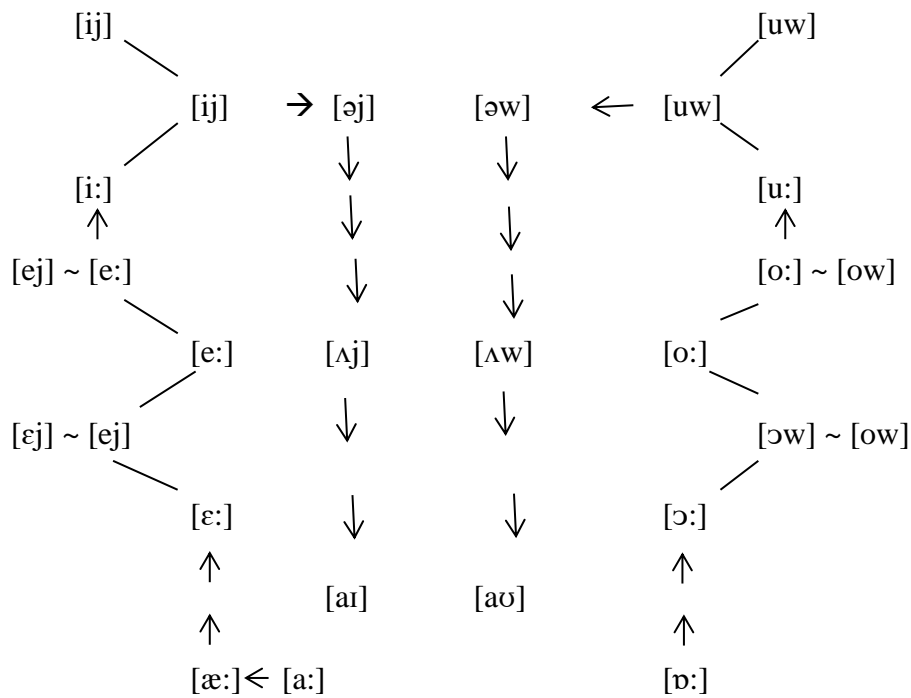
[ij]   [uw]
    \   /
      [ij] → [əj]   [əw] ← [uw]
    /   ↓   ↓   \
[i:]   ↓   ↓   [u:]
  ↑   ↓   ↓   ↑
[ej] ~ [e:]   ↓   ↓   [o:] ~ [ow]
    \   ↓   ↓   /
      [e:]   [ʌj]   [ʌw]   [o:]
    /   ↓   ↓   \
[ɛj] ~ [ej]   ↓   ↓   [ɔw] ~ [ow]
    \   ↓   ↓   /
      [ɛ:]   ↓   ↓   [ɔ:]
        ↑   [aɪ]   [aʊ]   ↑
        ↑   ↑
    [æ:]← [a:]   [ɒ:]

Figure 2.4.5 The mayor long-vowel changes in ME and EME (Minkova 2014: 265)

The changes of the GVS can be clearly seen in Figure 2.4.6:

[i:]	[əɪ] > [aɪ]	mice
[u:]	[əʊ] > [aʊ]	mouse
[e:]	[i:]	geese
[o:]	[u:]	goose
[ɛ:]	[e:]	break
[ɔ:]	[o:]	broke
[a:]	[ɛ:]	name

Figure 2.4.6 The effect of the GVS (Algeo 1982)

Barbara A. Fennell (2001) explains the GVS in the following way:

> The Great Vowel Shift began in about the fifteenth century and was largely completed by the late sixteenth or early seventeenth century. One interpretation of this shift has it that in the first stage the phoneme /i:/ as in *wine* and *tide* developed a series of "slurred" pronunciations with the preceding on-glide [ɪi] and [əi]. Similar on-glides developed for the long close back vowel [u:]: [ʊu] and [əu]. During the second stage the mid-close vowels /e:/ and /o:/ raised to /i:/ and /u:/, and [ɪi] and [əu] became phonemes. Middle English /ɛ:/ and /ɔ:/ raised to /e:/ and /o:/, and /a:/ was raised to /ɛ:/. (Fennell 2001: 159).

As Minkova, Fennell describes the process as a chain shift: the non-high vowels moved up to the next vowel height becoming high vowels and the high vowels become diphthongs. So, the "chain" aspect is a systematic interconnection: there is a "system-

wide coordinated movement in which each chain triggers or implies another" (Fennel 2001: 159). The raising of the mid vowels /e:/ and /o:/ pushed the high vowels /i:/ and /u:/, and they left a space which was filled with /ɛ:/ and /ɔ:/. Later, when /ɛ:/ raised to /e:/, /a:/ moved into the empty space. In conclusion, by the mid-sixteenth century, everything except the raising of /a:/ was concluded (Fennell 2001: 159).

The diphthong changes in Modern English are represented by Pyles & Algeo (1993) in the next table:

LATE MIDDLE ENGLISH	EARLY MODERN ENGLISH
[au] as in *lawe*	[ɔ]
[æɪ] > [a:] as in *nail*	[æ:] > [ɛ:]
[ɛu] and [ɪu] as in *fewe* and *knew*	[yu]
[ɔu] as in *snow*	[o]
[ɔɪ] as in *joy*	No change
[uɪ] as in *join*	[əɪ]

Figure 2.4.7 The diphthongs changes in Modern English (Pyles & Algeo 1993: 175)

In order to understand and recap the changes of Modern English vowels after the GVS, the main changes will be briefly mentioned below, based on Wells (1982).

- The FLEECE [I:] Merger (17c): [i:] and [e:] merged into [i:].
- The Long Mid Mergers (17c): [æɪ] and [ɛ:] merged into [ɛ:], and [ɔʊ] and [o:] merged into [o:].
- The Eighteenth-century Raising (18c): [ɛ:] raised to [e:].
- Long Mid Diphthonging (18c): [e:] became [eɪ] and [o:] became [oʊ].
- The FOOT-STRUT Split (17c): unrounding and lowering of [ʊ] concluding in a split into former [ʊ] and new [ʌ].
- The NURSE Merger (17c): [ɪ], [ɛ] and [ɤ] became [ə] before the consonant /r/.
- Pre-R Lengthening (17c): lengthening of vowels before /r/.
- Pre-R Breaking (18c): inclusion of [ə] after high and long vowels and before /r/.
- Pre-Schwa Laxing (18c): a vowel becomes short and lax after [ə].
- THOUGHT Monophthonging: /aʊ/ became /ɔ:/.
- GOAT Advancement: [oʊ] became [əʊ].

2.5. The vowels of Present-Day English

The period of Present-Day English is mainly characterized by imperialism and various revolutions. The English known today was already established in the 18th century; for this reason, no great differences can be observed between Early Modern English and Present-Day English. As for the phonological changes, they vary depending on the different dialects, which are not studied in this work due to the focus on standard English or RP English.

As mentioned at the beginning of this work, the PDE vowels are described by different characteristics. According to Minkova (2014: 32), "The most important active articulator in vowel production is the tongue body and the actual phonation occurs in the vocal tract". Also, the airstream permitted free course through the mouth. Described through height and backness, the quality of a vowel sound changes depending on the movement of the lips and the tongue, as explained earlier.

Taking that into account, it must be said that the IPA vowel chart contains twenty-eight different vowels which can be altered by diacritics, marking length, nasalization, and so on. The next chart shows the IPA vowel chart of PDE (Minkova 2014: 33-34):
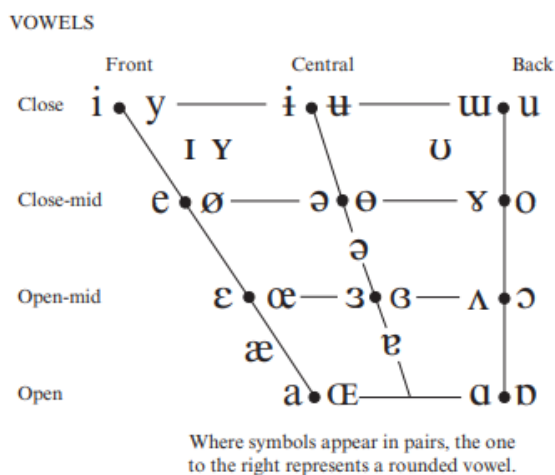

Figure 2.5.1 The IPA vowel chart PDE (Minkova 2014: 33)

	FRONT	CENTRAL	BACK	
			Unrounded	Rounded
Upper high	iː (FLEECE)			uː (GOOSE)
	———	———		———
Lower high	ɪ (KIT)			ʊ (FOOT)
Upper mid	eɪ (FACE)	ɚ/ɜː (NURSE)		oʊ (GOAT)
	———	ə (COMMᴀ)		———
	———		———	———
Lower mid	ɛ (DRESS)		ʌ (STRUT)	ɔː (THOUGHT)
Upper low	æ (TRAP)			
Low			ɑ (LOT,PALM) (GA)	ɒ (LOT) (SSBE)

Figure 2.5.2 The IPA vowel table PDE (Minkova 2014: 34)

Regarding short and long vowels, in PDE long vowels are represented with the diacritic ":". Length is also referred to as "quantity", and it describes the physical duration of vowels. In PDE English, in addition to the duration, the vowels have different articulatory and acoustic properties, and the terms tense and lax are used. These refer to the manner of articulation of vowels: a tense vowel involves a larger muscular effort, and a lax vowel requires a smaller muscular effort.

The vowels of English are monophthongs: in short vowels there is no qualitative difference between the beginning and the end of the vowel, but for the long vowels, as their duration is longer, the quality can change. So, concerning the diphthongs [eɪ] and [oʊ], the quality of the vowel changes because they are composed of different components with different quality. The matter here would be that diphthongization entails the addition of a glide: in the case of long vowels towards a higher vowel ([eɪ] and [oʊ]), and into a schwa-like central vowel with short vowels ([ɪə]). Taking all this into account, the PDE has eight diphthongs: five closing diphthongs /eɪ/, /əʊ/, /aɪ/, /aʊ/, /ɔɪ/ (as in *day*, *goat*, *mice*, *south* and *voice*), and the three centering diphthongs /ɪə/, /eə/, /ʊə / (Minkova 2014: 32-38).

Continuing on the same topic, Pyles & Algeo (1993) explain also the organization of the PDE vowels: [i], [ɪ], [e], [ɛ] and [æ] are front vowels and [u], [ʊ], [o], and [ɔ] are back vowels. Regarding the vowel [ə], it is mid and central; it is one of the most important symbols in PDE, known as *schwa*. Then, the vowel [ɑ] is low and central. On the other hand, they also explain how [i], [e], [u], and [o] are tense vowels while [ɪ], [ɛ], and [ʊ] are lax.

2.5.1. Sound Changes

Taking all this into account, it is important to understand the different kinds of sound change that the English language suffered during its existence. Sound change is the most universally studied aspect of language change. The Ohio State University (2016) defines the term as follows: "Sound change is an alteration in the phonetics of a sound as a result of a phonological process. If a phonological process is introduced into a language where it did not formerly occur, it may result in a sound change" (The Ohio State University 2016: 538). The most known sound change is assimilation: it consists of a sound becoming more similar or even equal to a neighboring sound, that is, the place of articulation of a sound is anticipated by the speaker; for example, Old English voiceless fricatives became voiced between voice sounds: "wolves" *wulfas* [wulfas] became [wulvas] (The Ohio State University 2016: 541). In other words, one sound receives characteristics of the following sound in order to make the speaking more fluid. Another sound change is dissimilation, and as the name suggests, it is the opposite of assimilation: in this case, the neighboring sounds become less like one another; that is, when the sounds are too similar, the speaker changes them in order to facilitate the pronunciation. The ellipsis or deletion of unstressed sounds is another sound change: this consists of the loss of sounds due to the lack of stress. So, when talking, the speaker unconsciously "deletes" the sounds that are not "indispensable"; for example, as mentioned earlier, at the end of the Middle English period unstressed word final [ə] was deleted.

The next sound change is intrusion or epenthesis, and it is the opposite of ellipsis: it consists of the intrusion of sounds. These sounds are introduced in some words due to the process of going from one sound to another; the speaker, always unconscious of it, needs to introduce that new sound. For example, in Modern English, the word *athlete* is pronounced [æθəlit], inserting [ə] between the consonants of a cluster difficult to pronounce (The Ohio State University 2016: 541). Monophthongization and diphthongization are also part of the sound changes: monophthongization refers to a change from a diphthong to a simple vowel sound (a monophthong) and diphthongization refers to a change from a simple vowel sound to a complex one (a diphthong). Then, the already mentioned raising and lowering refer to changes in the height of the tongue in the production of vowels. The also mentioned backing and fronting refer to alternations in the frontness or backness or the tongue in the production of vowels. Finally, the last sound change is metathesis: during this process, the order of sounds can be changed, and it may

happen in words like *produce*, the initial [prə] may become [pər] (Pyles & Algeo 1993: 36-38).

2.6. Linguistic development factors

According to Barbara A. Fennell (2001), languages change for several reasons: first, they have an internal dynamic structure which may change, and second, they may change because people do not learn them impeccably. Moreover, people do not speak in the same way all the time: there is an individual variation in the production of sounds and in the use of specific words. These variations generate the potential for change. Also, people normally shift their speech depending on the person they are talking to, which in social psychology is called "linguistic accommodation". A different reason for languages to change is that speakers of a language are in contact with speakers of different languages. This can be because of different reasons and depending on the circumstances, replacement can occur: the dominant language of a territory may control entirely the language of the "invaders". However, language separation can also lead to change: when the English language arrived in America, it differed from British English due to conditions such as physical geography and forms of government.

On the other hand, languages also undergo changes for internal reasons. The main example in the English language to demonstrate this is that it changes from a synthetic[12] language to an analytic[13] one. Another significant internal change would be front mutation or i-umlaut, which occurred between Germanic and Old-English: "if un unstressed syllable containing [i] or [j] followed a stressed syllable, the vowel of the stressed syllable was fronted or raised in anticipation of it (that is, it partially assimilated to the next vowel)" (Fennell 2001: 6). In conclusion, the external causes of language change are geography (division of one language from another or language contact), contact with new or old phenomena (the necessity to adjust to different aspects of society), imperfect learning, and social prestige factors. On the other hand, the internal causes

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[12] Synthetic language: bound morphemes are attached to other morphemes, so a word may be made up of several meaningful elements (The Ohio State University 2016: 172).

[13] Analytic language: a language made up of sequences of free morphemes-each word consists of a single morpheme, used by itself with meaning and function intact (The Ohio State University 2016: 171).

would be the facility of articulation, analogy, reanalysis, and randomness (Fennell 2001: 3-7).

3. Conclusion

A conclusion that can be drawn from this entire study is the importance of studying the history of English: as specified by Thomas Pyles and John Algeo (1993: 2), "one of the best reasons for studying languages is to find out about ourselves, about what makes us persons". A good method to study languages is the historical; to comprehend how features are, it is crucial to know how they became that way. In the English language, several of the irregularities are the remains of earlier regular patterns, and as to the complex spelling of Modern English and the phonological changes occurred through the centuries, it can be explained historically; in sum, thanks to the history of English we have been able to understand the phonological changes of the English vowels (Pyles & Algeo 1993: 2-3).

We have started this work wondering about the vocalic changes of English. As a summary, the subsequent is provided: the vowel changes from Indo-European to Germanic were not very drastic and were normally simplifications. During this process, the number of vowels reduced: Indo-European had six short vowels ([ɑ, e, i, o, u, ə], five long vowels ([a, e, i, o, u]), and six diphthongs ([ei, ai, oi, eu, au, ou]). Then, Germanic had four short vowels ([ɑ, e, i, u)], five long vowels ([æ, e, i, o, u)], and three diphthongs ([ai, eu, and au]) (Fennell 2001: 40). To conclude, this stage was not one of the most remarkable for the history of English vowels.

In the case of Old English, there were four primary changes, and the result was the following: Germanic vowels and diphthongs [ɑ, ai, au, and eu] became Old English [æ, a: e:a, and e:o]. Furthermore, because of the well-known i-umlaut, the breaking, and the front mutation, Old English had 15 vowel sounds ([y:, y, i:, ɪ, u:, ʊ, e:, ɛ, ə, o:, æ:, æ, ɑ:, ɑ, ɔ]), and four diphthongs ([eo, ɛo, æ:ə, æə]) (Fennell 2001: 62-63). Nevertheless, not all experts in the English language share the same opinion. But considering all the previous information, it can be seen how the changes in vowels at this time began to be more apparent.

Concerning Middle English, vowels started to develop qualitative changes: long vowels became more tense and short vowels laxer. This meant that quantitative changes – the length of the vowels – were not so important anymore. The next changes occurred in this period: the vowels [ɑ:, æ, æ:, y, y:, æə, æ:ə, ɛo, e:o] became [ɔ:, ɑ, ɛ:, ɪ, i:, ɑ, ɛ:, ɛ, e:]. Moreover, new diphthongs were formed: [ɑʊ, ɛɪ, ɛʊ, iʊ, oʊ, ɔɪ].

The Early Modern English period was the most influential on the vocalic system of the language. As mentioned, due to *the Great Vowel Shift* all long vowels except two were raised, which resulted in the biggest change in the vocalic system: the vowels [iː, uː, eː, oː, ɛː, ɔː, aː] raised to [əɪ, əʊ, iː, uː, eː, oː, ɛː]. This change has been one of the most investigated in the vowel system of the English language, and today the answers are not totally accurate, since being such a big change, it is extremely difficult to examine.

Finally, all these changes led to the PDE vowels and diphthongs being the resulting: [i, ɪ, e, ɛ, æ. ə, ʌ, u, ʊ, ɔ, ɑ] and [ɪə, ʊə, eɪ, əʊ, ɔɪ, eə, aɪ, aʊ]. With this in mind, it would be interesting to compare these vowels with those of Old English to see the change: [yː, y, iː, ɪ, uː, ʊ, eː, ɛ, ə, oː, æː, æ, ɑː, ɑ, ɔ], and [eo, ɛo, æːə, æə]. As we can see, the [y] is no longer considered a vowel and the [ʌ] is a new vowel; then, almost all the others have changed quantitatively or qualitatively, and as for the diphthongs, they have totally changed since there are none left like those of Old English.

Understanding all the changes that a language undergoes would be very difficult without obtaining historical data, and the importance of vowels is remarkable: all the information they provide with a single change is really interesting; and, especially in the case of English, it is very relative since the vocalic variety is very large in comparison, for example, with Spanish. Indeed, from this work it is drawn as evidence the exceptional complication of the English vocalic system considering the formidability of explaining its phonological development. Analyzing the studies of different authors, we have come to the conclusion that none have exactly the same answers for everything; that is, some defend the change to a specific vowel, others to a different one, the symbols are not always the same, and it is not entirely clear either what vowels were used in each era. This is completely understandable and irreproachable; in addition to be a study that requires a lot of work and research, all vowels depend on a context: where they were used, who used them, and what they were used for; many times, data of this type is almost impossible to obtain, which leads us to the difficulty of an unanimous criteria and theoretical thesis about the development of the English vocalic system. For this and many other reasons, vowels were, are, and will be the aspect of English development that stand out most prominently in the investigations of the linguistic experts.

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