



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

문학석사 학위논문

Approximants as Identifiers of English Accents

접근음을 통한 영어 방언의 구분

2016년 2월

서울대학교 대학원

영어영문학과 어학 전공

류진호

Abstract

Approximants as Identifiers of English Accents

Ryu, Jinho

Department of English Language and Literature

The Graduate School

Seoul National University

English has many dialects and accents with distinct characteristics. They differ by the region they are spoken and the socioeconomic class of their speakers. Studying the characteristics of each variety of English may help understand the language in more depth. The present study investigates the phonological and phonetic properties of five varieties of English: Received Pronunciation, Cockney, Scottish English, General American, and American Southern Accent. The five varieties of English are examined in terms of their different ways of handling four approximants: palatal /j/, velar /w/, lateral /l/ and rhotic /ɹ/. Cross-examining the possible variation of the approximants and the characteristics of the accents of English proposes that these sounds are capable of identifying the accents.

Each approximant has distinguished different number of accents, and thus they are stratified according to their capability to identify the accents. The palatal and rhotic approximants could identify all five accents tested in the present study. The lateral approximant could recognize three due to a difficulty in clear and dark l.

The velar approximant showed very little change and identified only one accent.

From these findings, this study proposes a hierarchy built according to the number of the accents each approximant is capable of identifying. It is revealed that consonantal change is the most effective marker that can pinpoint an accent due to its resistibility against change. The next is the change in vowels which are more vulnerable to change than consonants. The least effective is the conditional changes that only occur in certain conditions.

Keywords : approximant, accent identifier, Received Pronunciation, Cockney,
General American, Southern American, Scottish English

Student Number : 2012-20022

Table of Contents

Abstract

Table of Contents

Chapter 1 Introduction.....	1
1.1 Motivation.....	1
1.2 Speech sounds and varieties of English	3
1.3 Structure of the study.....	4
1.4 The organization of the Study.....	5
Chapter 2 Approximants.....	6
2.1 Semivowels.....	7
2.1.1 Palatal approximant /j/	
2.1.2 Labial velar approximant /w/	
2.2 Liquid Consonants.....	17
2.2.1. Lateral approximant /l/	
2.2.2. Rhotic approximant /ɹ/	
Chapter 3. Varieties of English.....	25
3.1 Dialects and Accents.....	26
3.2 Varieties in British Isle.....	27
3.2.1 Received Pronunciation	
3.2.2 Cockney	
3.2.3 Scottish	
3.3 Varieties in America.....	36
3.3.1 General American	
3.3.2 Southern American	
3.4 Method of Analysis.....	43
Chapter 4. Approximants in Accents of English.....	45
4.1. Received Pronunciation.....	45
4.1.1 Palatal glide/j/	
4.1.2 Velar glide/w/	
4.1.3 Lateral approximant /l/	
4.1.4 Rhotic approximant /ɹ/	

4.2 Cockney.....	52
4.2.1 Palatal glide/j/	
4.2.2 Velar glide/w/	
4.2.3 Lateral approximant /l/	
4.2.4 Rhotic approximant /ɹ/	
4.3 Scottish English.....	57
4.3.1 Palatal glide/j/	
4.3.2 Velar glide/w/	
4.3.3 Lateral approximant /l/	
4.3.4 Rhotic approximant /ɹ/	
4.4 General American.....	60
4.4.1 Palatal glide/j/	
4.4.2 Velar glide/w/	
4.4.3 Lateral approximant /l/	
4.4.4 Rhotic approximant /ɹ/	
4.5 Southern American.....	64
4.5.1 Palatal glide/j/	
4.5.2 Velar glide/w/	
4.5.3 Lateral approximant /l/	
4.5.4 Rhotic approximant /ɹ/	
Chapter 5. Discussion.....	69
5.1 Palatal Approximant.....	69
5.2 Velar Approximant.....	71
5.3 Lateral Approximant.....	72
5.4 Rhotic Approximant.....	73
5.5 Hierarchy of Approximants as accent identifiers.....	74
Chapter 6. Conclusion.....	79
Bibliography.....	81
국문초록.....	84

Chapter 1 Introduction

Language is like a living organism that evolves as many linguists have said. Trudgill (1974) asserts that language is constantly changing. When a change occurs in a language community, it spreads to nearby communities. Some changes may travel farther and cover the whole country while others stay in a smaller area due to various restrictions. Speakers may have different ways of pronouncing a word, they may have a slightly different but similar word for it, or they may have a completely different word for the same object. For instance, *soda*, *pop*, and *coke* all indicate the same category of carbonated soft drinks in the United States (Labov 2012). In some Midwestern states, it goes by *pop*, but, in the states along the coast lines, the term is *soda*. Coke covers all varieties of soft drinks including Pepsi in southern states. The difference in the way people use their language is not restricted to pronunciation or words. Some speakers may use a distinct sentence structure from other speakers. For example, American English speakers ask, ‘*Do you have any idea?*’ using a modal auxiliary *do* while British English speakers say, ‘*Have you any idea?*’ without the modal auxiliary. As shown in these examples, a group of speakers share patterns of speaking their language such as pronunciation, vocabulary, and syntax. The set of shared characteristics of a group of people form a variety of the language. The variety is usually named after the common property of the speakers such as age, region, and socioeconomic class.

1.1 Motivation

Studying different languages is a very important and interesting work. By comparing and contrasting different languages, we may discover many valuable information regarding human language such as the origin and the reason behind the birth of language, innate language ability, related brain capability, and et cetera. Meanwhile, studying variations of one language is equally important. Trudgill (1974) asserts that it is linguistically significant because it contributes to the study of the language's past, present and future by collecting data including extinct forms and minor forms that are only used in certain areas. It can also contribute to social sciences by providing demographic data such as migration patterns and distribution. More importantly, investigating the qualities that are unique to an accent could lead to various linguistic findings. Linguistic change is not a random process. It conforms to the rules of the language and changes within the boundaries allowed by the language. Changes and variations within a language may help uncover phonological and phonetic rules yet to be discovered and confirm rules that are already argued for. Also, the knowledge about the qualities of speech sounds of an accent can help the speaker be understood by listeners of other accents and even speech-recognizing machines.

This study was motivated by a rather simple question: How does one recognize an accent? What are the factors that allow the listener to identify accents? There are many prosodic queues in a speech such as vowel and consonant qualities, pitch, tone and stress patterns. Often, some speakers of an accent are identified by their distinct

vocabulary, for example, *lift* instead of *elevator*. Others may be recognized by difference in the vowels and consonants. The present study intends to focus on the quality of speech sounds at segmental level. Vowels and consonants of English accents have been studied extensively by many prominent researchers. Trudgill (1984, 1999), Wells (1982), Roach (2004), Labov (2006) and Hughes et al (2005) have studied various accents and dialects of English. In their studies, the characteristics of the accents were presented in two groups: consonants and vowels. However, no study has contrasted and distinguished accents by looking at smaller group of sounds that share a common feature.

This research attempts to compare, contrast and distinguish different accents of English by looking at approximants, rather ambiguous sounds that are not vowels, but not exactly consonants. The research questions are as follows.

- 1) How effective are approximants in identifying accents of English?
- 2) If they prove to be effective, can they be ordered according to their effectiveness?

The present study aims to investigate diverse accents of English in regard to the different realizations of the approximants. Moreover, it attempts to suggest a hierarchy of the sounds according to their effectiveness in distinguishing accents, and generalize the findings so that they can be applied to more number of accents.

1.2 Approximants in question

The four approximants examined in this study are two semivowels and two liquid consonants. The semivowels, /j/ and /w/, are interesting in that they are articulated in the same way as vowels do, yet they are not vowels. Liquid consonants /ɹ/ and /l/ are also very interesting because they can sometimes substitute vowels in a syllable although they are consonants. These four ambiguous sounds behave differently in the five varieties of English investigated here. This study explores into the distinct ways of handling these four vowel-like consonants in the five varieties of English and the potential of the four sounds as accent identifiers. The ultimate goal of the present study is to evaluate the approximants as tools to distinguish accents of English.

1.3 Varieties of English

The present study examines how four approximants /j/, /w/, /ɹ/, and /l/ are handled in five different varieties of English, namely Received Pronunciation, Cockney, Scottish, General American and Southern American. Received Pronunciation, Cockney and Scottish are varieties of British English, and General American and Southern American are varieties of American English. These five types of English exhibit quite interesting phonological distinctions. Received Pronunciation and General American are the two most widely spread varieties and

standard varieties of the U.K. and the U.S., respectively. American Southern Accent is a regional variety that covers a vast area of over ten states in Southern part of the U.S. Cockney has both regional and socioeconomic association in London, England. Scottish, a regional variety in Scotland, is famous for its low comprehensibility by speakers of other varieties.

1.4 The organization of the Study

This study consists of six chapters. The first chapter is the introduction which unveils the motivation of this research. The next chapter defines and examines the phonetic and phonological characteristics of the four approximants. The third chapter describes the varieties of English selected for this study and the phonetical method used to examine them. The fourth chapter investigates in detail how the approximants are handled differently in each variety of English. Chapter five discusses the findings and the last chapter concludes the study.

Chapter 2 Approximants

The sounds of English are roughly classified into two groups: consonants and vowels. Consonants are produced through obstruction in the airflow by lips and tongue, and vowels are produced by keeping constant frictionless airflow without obstruction (Roca & Johnson, 1999). In general, consonants have low sonority or amplitude, and vowels have relatively high sonority. This difference is the outcome of different articulation methods. Vowels are articulated without obstruction in the airflow, so they have higher sonority than consonants which are articulated through obstruction of airflow. Nonetheless, some consonants are articulated with very little or no obstruction; thus yielding a high sonority. Such highly sonorous consonants are called approximants. In English, four sounds belong to this class: /j, w, r, l/. The following is a modified version of the consonant chart of the International Phonetic Alphabet (IPA). The original IPA chart has more consonants, but consonants that are not used in English are omitted for convenience. Also, /w/ is added in the velar approximant slot, and a row for affricates is added in the manner of articulation column to accommodate /tʃ/ and /dʒ/ in the voiceless and voiced postalveolar slot respectively. They are not on the standard IPA chart, and normally transcribed with a tie bar (tʃ̚ and dʒ̚) to indicate affrication. Approximants vary quite diversely in different environments and such characteristics will grant them the power to distinguish different varieties of English.

Table 2.1 English Consonant Inventory

	Bilabial	Labiodental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
Plosive	p b			t d			k g	
Affricate					tʃ dʒ			
Nasal	m			n			ŋ	
Fricative		f v	θ ð	s z	ʃ ʒ			h
Approximant	(w)				r	j	w	
Lateral approximant				l				

As shown in the chart above, approximants in English are /j, w, l, ɹ(r)¹/. The first two sounds, /j/ and /w/, are categorized together into *semivowels*. The other two, /l/ and /ɹ/, are categorized together into *liquids*. These two categories of consonants show a very interesting contrast, because semivowels, which are born as vowels, but function as consonants while liquid consonants can function as vowels. This study focuses on these four interesting sounds which will be examined in depth in the following sections. The target sounds are analyzed phonetically using spectrography and phonologically using rules according to their position, in onset or coda.

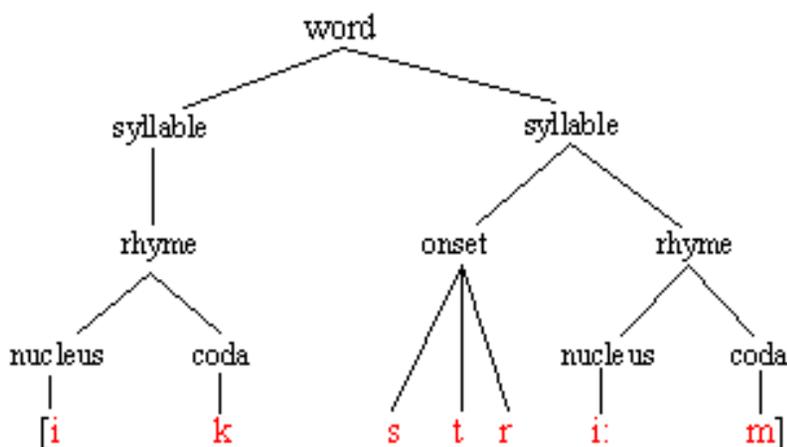
2.1 Semivowels

The consonant family has two adopted children. These two sounds are born as

¹ Many studies indicate the rhotic approximant as /r/ for convenience in writing, but, in fact, it is a trill which does not appear in English. The present study uses the precise symbol for English rhotic approximant, /ɹ/.

vowels, but function as consonants. Semivowels, also called glides or semiconsonants, are the sounds that are articulated as vowels, but classified as consonants. Jakobson et al (1952) asserts that glides are [-consonantal, -vocalic], which means they are neither consonants nor vowels. However, Chomsky and Halle (1968) define them as [-syl, +son] which indicates that glides are sonorous, but non-syllabic consonants. Proposed in more recent studies such as Halle (1992) and Kenstowicz (1994), *vocoid* is the category that embraces glides along with vowels and syllabic sonorants. The glides are identified as consonants because they are non-syllabic; they cannot function as the nucleus of a syllable. The following is the syllable structure of an English word *extreme*.

Figure 2.1 Syllable Structure of *extreme*



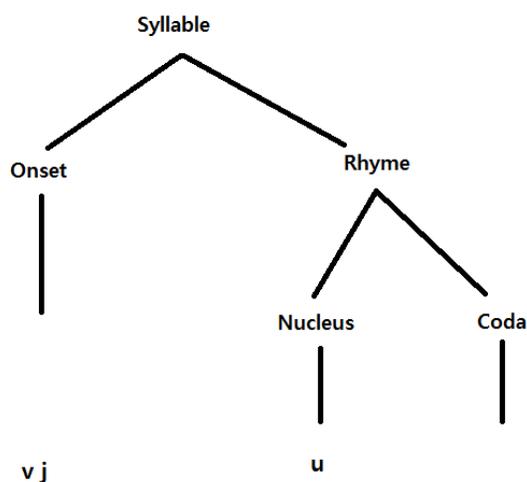
A word contains one or more syllables which consist of onset, nucleus and coda. There may be multiple sounds in onset or coda forming an onset or coda cluster, but

the nucleus of a syllable must be a single sound with the highest sonority in the syllable. By definition, glides cannot be a nucleus.

Although glides are produced in the same way as vowels are produced, they are not proper vowels. Thus, they were named semivowels. In IPA, they are transcribed as /j/ and /w/. The former, the palatal glide, appears between consonant and the vowel in words such as *view* [vju] or immediately follows the vowel in such words as *boy* [boj]. The latter semivowel, the velar glide, is the sound before the vowel in such words as *one* [won] or after the vowel in words such as *how* [haw]. As one may notice while pronouncing, these sounds are not as clear and strong as other vowels. Maddieson (1984) reports that 81% of world's languages have the /j/ glide, and 76% have the /w/ glide. Semivowels are quite extraordinary in character, but very common in human languages.

Having vowel-like properties, these two sounds are the two most sonorous consonants. Therefore, they cannot appear before the onset consonant in a syllable. For example, words such as /wkan/ and /jvu/ are not allowed by phonotactics which regulates possible combination of sounds in a language. Such sequence violates the principle of Sonority Sequencing which states that sonority in a syllable must keep rising until the peak, the vowel. This principle explains why such words as /npas/, /lkej/ and /mtep/ are not allowed sequences in English, because the sonority initially falls then rises back up in these words. The only place glides can occupy is immediately adjacent to the vowel. Below is the syllable structure of *view*.

Figure 2.2 Syllable structure of *view*



In a syllable, the glides must be the last consonant in the onset consonant cluster as in *queue* /kju/ or *swan* /swan/. The glides may be referred to as either prevocalic or postvocalic. When the glide comes before the vowel, it is referred to as prevocalic glide or onglide. A postvocalic glide or offglide appears after the vowel. Each semivowel will be investigated in the following sections.

2.1.1 Palatal Approximant /j/

The semivowel /j/, also known as *yod*, is a palatal approximant. It is articulated at the palatal area and the airflow is continuous and frictionless as when a vowel is articulated; thus classified as an approximant (Roca & Johnson 1999). The tongue stays in the palatal area, and the lower jaw stays up. In the spectrogram, this sound presents low F1 and often, this high glide is confused with or treated as high front

tense vowel /i/ or lax vowel /ɪ/. Borowsky (1986) suggests that the glide and high front vowel are underlyingly undistinguished. That is, in the underlying representation both sounds have the potential to surface, but one of them is chosen according to the position in the surface representation when the sound is actually produced. Following Borowsky, the present study examines postvocalic glides /i/ and /ɪ/ along with the palatal glide.

A prevocalic glide appears in a few environments. The most frequent and varying appearance is before the high back vowel /u/ as in *queue* /kju/ and *Europe* /ju.rəp/. When the glide is the only onset of the syllable as in *Europe*, it shows no change and fulfils its duty as the onset. However, when the glide is adjoined by a preceding consonant as in /kju/, it may behave differently. Represented as ‘Cju,’ the combination of a consonant C, the palatal glide /j/ and the high front round vowel /u/ surfaces in three forms depending on two factors. The first factor is the preceding consonant. When the preceding consonant belongs to the coronal group, - dental, alveolar and postalveolar – Cju cluster shows three variations: a) yod dropping, b) yod coalescence and c) yod maintaining. In the case of non- coronal consonants, the glide is maintained as in *queue*, *view*, *few* and so on. The interesting variation is with the coronal sounds. Sometimes, when a coronal consonant such as /d/, /t/, /n/ and /l/ precedes /ju/ sequence, yod-dropping or -deletion occurs, and the glide is literally dropped. For example, *tube* is pronounced as /tub/ without the glide. This process can be represented as the following rule:

(1) [j] deletion

[-cons] → ∅ / [coronal]_u
[+high]

In varieties where /j/ deletion occurs, *new* rhymes with *too*, but not *few*.

Yod-coalescence, also known as palatalization, is the change of preceding coronal stops /t, d, s, z/ into palatal or postalveolar affricates /tʃ, dʒ, ʃ, ʒ/ respectively. In some varieties of English, *tube* is pronounced /tʃub/. This rule may be written as:

(2) Yod coalescence

[coronal]	→	[-anterior]	/	_____	[+high]	[-consonant]
[-sonorant]		[+strident]			[-back]	[+high]
						[+back]

This phenomenon is a type of assimilation in which two distinct sounds become similar. When this happens in general one sound changes so that it is similar to the other sound. For example, when prefix *in-* is attached to *possible*, it assimilates to the following consonant /p/ and becomes *impossible*. In this process, the feature [bilabial] spreads to the prefix *in-* and converts alveolar nasal [n] to bilabial nasal [m]. Such change is explained by the one of economy principles, ease of articulation. Regressive assimilation is when a sound triggers the change in preceding sound as in the given example, because the direction of assimilation is backwards. The opposite process is progressive assimilation; a sound changes the next sound. Yod coalescence seems like neither, because an alveolar sound meets a palatal sound and becomes the sound in the middle, a postalveolar.

Morpheme level palatalization of Cju combination occurs in certain varieties of English. However, when ju combines with the final coda of preceding word or syllable as in *would you*, or *got you*, C.ju series is palatalized in all varieties of English. Even in varieties that either drops or keeps the glide in such environment Cju palatalizes. This is a very peculiar and inconsistent characteristic of Cju combination.

The last option is to keep the yod as in *new* /nju/. In this case, *new* rhymes with *few* and *view*, but not *too*. This phenomenon involves no change from underlying representation to surface representation, so no particular rule is applied.

This palatal glide may also appear before other vowels than /u/, but the frequency is not very high. The runner-up is mid front vowel /ɛ/ in such words as *yes*, *yet* and *yell*. However, no English word has an onset cluster of Cj followed by this mid front vowel. Yod also appears before low back vowel /a/ or /ɑ/ in few words such as *yard* and *yarn*, but Cja or Cjɑ cluster is not found. Rounded mid back vowel /o/ has as low frequency as low back vowel. Only a few words including *yogurt*, *yodel* and *York* has /jo/ combination. This mid back vowel seems to have no onset cluster that includes the palatal glide /j/. Unrounded mid back vowel /ɔ/ appears after yod in *yacht*, but has no appearance after Cj cluster. To sum up, unlike high back vowel /u/, other vowels rarely appear after yod, and when the yod is preceded by a consonant, /u/ seems to be the only vowel that follows the yod.

Is the glide a part of diphthong or just the last member of onset cluster? Hammond treats /ju/ as a diphthong, a complex of two conjoined vowels. If /ju/ is a diphthong,

j-deletion rule must be replaced with vowel reduction rule, because a diphthong is reduced to a monophthong. This explanation also seems plausible, but there is a problem. It cannot explain the phenomenon of yod-coalescence in which the /tj/ cluster transforms into an affricate sound. If /ju/ is a diphthong, the process of coalescence is too complex. The glide and the vowel forming a diphthong must be detached from each other into two single vowels, then the glide must be attached to the preceding consonant and finally fused into an affricate sound. There must be at least three rules or steps for his definition. It seems more reasonable to treat the glide the final member of onset cluster.

The palatal glide /j/ may also appear after the vowel and before the coda. In this case, the vowel and the glide are treated as a single long vowel, diphthong. Interestingly, it does not appear after high back vowel /u/ which shows the highest frequency with the glide in onset position. Other vowels are more acceptable with the offglide. Low back vowel appears quite often with the glide after it as in buy, tide, nine, and so on. Mid front vowel /ɛ/ or /e/ also frequently appear with the offglide as in bay, say, pain. Words such as boy and toy have the combination of mid back vowel /ɔ/ and glide. In short, offglide may follow all vowels except the high back vowel with which onglide shows the highest frequency.

The postvocalic glide does not incur drastic change as prevocalic glide, but it may certainly show distinction among varieties of English. In some varieties, the offglide is deleted after low or mid vowels resulting in shortening of the diphthongs /aɪ/ and /eɪ/ to /a/ and /ɛ/, and words such as *my* and *face* are pronounced as /ma/ and /fes/.

Contrastively, some varieties of English have been reported to insert /j/ after mid front vowel /ɛ/ or /æ/ as in *dead* or *damn*. Such lengthening of vowels by insertion or shortening of vowel by deletion of /j/ glide after the main vowel is not very common, but rather unique to a handful of varieties.

2.1.2 Labiovelar Approximant /w/

The other semivowel /w/ is a rounded labiovelar approximant. This sound is quite peculiar in that it has an unusual place of articulation. In fact, it has two places of articulation that are not adjacent. Labiodental consonants are made through the combination of two adjacent articulators, the upper teeth and the lower lip. Using two adjacent places to articulate a sound seems plausible. Unlike labiodental consonants, labiovelar approximant uses two articulators that are not adjacent. The airflow passes the first place of articulation created by the tongue at velar position, then comes out through the second place of articulation, rounded lips. In the IPA chart modified for English, /w/ occupies two slots in the labial and velar columns. Conventionally, it is often called velar glide.

In acoustic analysis, the labiovelar approximant is found to have very low F1 and F2 values

Although the velar glide and palatal glide belong to the same category, semivowels, they behave differently in the prevocalic position. Palatal glide, which is somewhat picky in selecting following vowel, has plenty words with /u/, but only

a few with other vowels. On the other hand, this velar glide can take any vowel for its partner except rounded vowels /o, u/ to conform to Obligatory Contour Principle which prohibits series of identical features – in this case, round.

(3) Possible velar glide + vowel combination

wɑ, wa	quiet, what, why, quite
wɪ, wi	will, twins, swing, tweet, sweet
wɛ, we	west, quest, wait, equate, suede

While the velar glide appears in many words with various vowels, it only accepts a few consonants before it. This is very contrastive with palatal glide which accepts most consonants when it precedes high back vowel /u/ as in *view*, *few*, *new*, *Tuesday*, *music*, *queue* and so on. However, velar glide in prevocalic position may take a few consonants such as /k, s, t/ as shown in (3).

Velar glide in postvocalic position is likely to be preceded by low or back vowels such as /a, ɑ, o/ as in *out* and *goat*. In some accents, it follows mid vowel /ə/ in *goat*. Having similar properties with high back vowel, velar glide is not found after high front vowel /i, ɪ/ unless specially intended.

In many studies, the postvocalic velar glide is represented as high back vowel /ʊ/ as in *about* [əbaʊt]. The glide, which is consonant, becomes a full vowel in a diphthong. Thus, for the purpose of the present study, it includes the high back vowel in the discussion of offglide.

2.2 Liquid Consonants

Liquid consonants are the highly sonorant consonants with partially obstructed airflow while allowing some air to escape freely (Roca & Johnson 1999). Such articulation allows liquids to have the highest sonority except semivowels. Liquids are divided into two groups, lateral and rhotic approximants. What is very special about liquids is that they are so sonorous that they can even substitute a vowel. In an unstressed final syllable, the liquid consonants function as the nucleus of the syllable as in *middle* and *water*. This is a unique characteristic of liquid consonants, but it does not play a crucial role in identifying accents. The properties that display distinction among accents are the vocalization and velarization of laterals and dropping of rhotics. At the word-final position, the lateral approximant may be articulated closer to velum or fully vocalize into a vowel. Also, rhotic approximant dropping is one of the strongest cues in distinguishing accents. Each approximant are examined further in the following sections.

2.2.1 Lateral Approximant /l/

Lateral approximant is a type of liquid consonant which is articulated by the tongue touching the back of upper teeth. Such method of articulation granted the name 'lateral' taken from Latin word *lateralis* which means 'of sides.' The constant airflow passing the sides of the tongue is the key to its high sonority. As

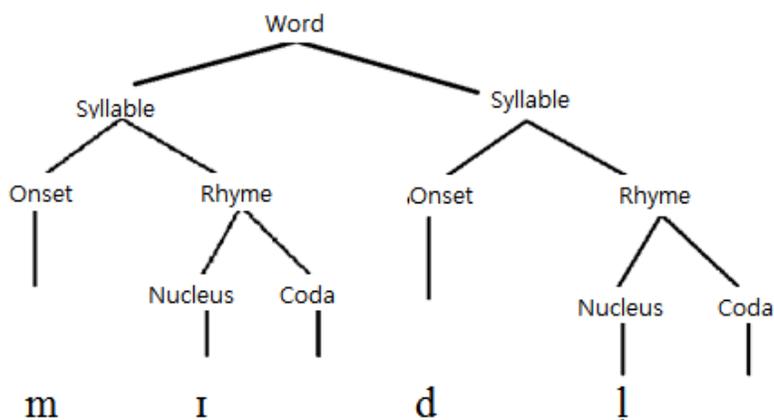
established in the previous section, a lateral consonant can substitute the preceding vowel. Syllabic l is represented with a tiny vertical line shaped diacritic below it.

(4) Examples of Syllabic l

Middle	bottle	couple
/mɪ.dəl/ → [mɪ.d̩]	/bɒ.təl/ → [bɒ.t̩]	/kʌ.pəl/ → [kʌ.p̩]

The syllabic l appears in unstressed syllables in which the preceding vowel is a reduced vowel, schwa. When an unstressed vowel is followed by lateral approximant, the vowel is lost, and the lateral takes vowel's place. The syllable structure of syllabic l is as follows.

Figure 2.3 Syllable structure of *middle* with syllabic /l/

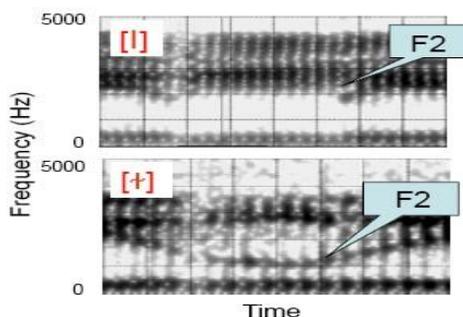


As shown in the figure above, the vowel is lost and the lateral approximant takes its place, the nucleus. In some varieties of English, the lateral evolves one more stage

and fully vocalizes into a back vowel /o, u/. Having high sonority and capability to function as the nucleus, lateral consonant possess the potential to become a full vowel.

Another curious property of lateral approximants is velarization or a dark /l/. The name ‘dark’ /l/ was given because its spectrogram² looks darker than a clear /l/. As shown in the figure below, the second formant drops low yielding a slightly darker area between the first and the third formant.

Figure 2.4 Spectrograms of clear and dark l.



Velarization refers to the process of moving the tongue back a little so that the sound is articulated in the velar area. When articulating a clear l, the tip of the tongue lightly touches the back of upper teeth. However, dark l is articulated with the body of the tongue held back towards the throat.

² Spectrogram is a tool for analysis of sounds and presents visual representation of frequencies of a sound. It illustrates the amplitude of the sound waves. See section 3.4 for more details.

In most cases, the velarized alveolar lateral appears in the coda regardless of whether it is the final sound or not. The word-final lateral approximants in *ball*, *foul* and *pool* are all dark. Also, the lateral between the vowel and final coda consonant in *milk*, *mild* and *tilt* are dark.

(5) Dark l in coda position

Ball	foul	pool
/bɔl/ → [bɔɫ]	/faʊl/ → [faʊɫ]	/puwl/ → [puwɫ]

The dark lateral generally occurs in the coda position as suggested, but some varieties including some North American accents may have it in the onset position, too. The velarization of the lateral in the onset position is not mandatory in any accents, but rather a free variation. Such accents will be dealt with in detail in Chapter 4.

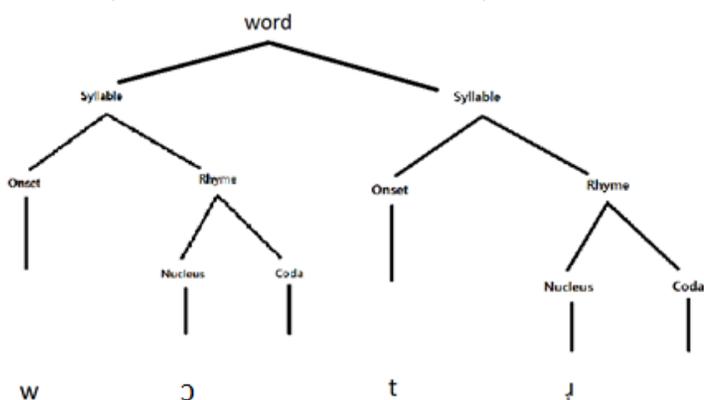
2.2.2 Rhotic Approximant /ɹ/

Rhotic approximant, like lateral approximant, is highly sonorous. Because the tongue touches nowhere when articulating this sound, the air flows continuously with no obstruction or friction. This liquid consonant is quite similar to the lateral approximant in that it shows no variation in the onset position. If there is a rhotic approximant in the onset position in the underlying form, it surfaces without any change. The only possible variation would be so-called ‘defective’ *r* and children’s

r which turn into velar glides. For instance, young children would pronounce *rock* as [wak]. That would be the same case for adults with defective *r*.

The next remarkable property of rhotic approximant is so-called syllabic *r*. In fact, this is a property of both liquid consonants. Just like the lateral approximant, the rhotic approximant can also be syllabic. That is, it can substitute preceding unstressed vowel and function as the nucleus of the syllable. The syllable structure of *water* is as follows.

Figure 2.4 Syllable structure of *water* with syllabic /ɹ/



The rhotic approximant, although it is a consonant, occupies the nucleus slot which is generally occupied by a vowel. Consequently, the second syllable of *water* consists of two consonants and no vowel. This is an interesting phonological event. Nevertheless, it is a universal phenomenon, and has no relation to accent.

A more important and noticeable phenomenon in regard to distinguishing accents is the rhotic approximant in the coda position. In some varieties of English,

the postvocalic rhotic consonant can either be produced or dropped. This phenomenon is called *rhoticity*. For instance, *car* may be pronounced either as /kar/ or /ka/. A rhotic accent fully pronounces the postvocalic r. Rhoticity was losing its prosperity in London area by 18th century and the accent of the area was becoming non-rhotic. Soon the whole southern British area became non-rhotic, and many British accents still are. This new fashion spread to American continent, too. In America, before World War II, non-rhoticity was considered prestigious, and appeared in speeches among people higher social class in many Eastern and Southern states. Not long after, the situation reversed. As figures without connection to England rose in power, rhoticity became prestigious.

As a result of a series historical events, England remains non-rhotic, and most of America has become rhotic. Namely, RP and Cockney are non-rhotic accent. Their *mar* and *ma* sound the same. On the other hand, General American is rhotic, and has different pronunciations for *mar* and *ma*. Rhoticity is very easy to pick up, so it is one of the most useful identifiers of accents.

Rhoticity only concerns rhotic approximants after the vowel. It applies to all postvocalic including rhotic approximants at word-final position, before another coda consonant and syllabic *r*. Thus, non-rhotic accent deletes the rhotic sound in *bar*, *part* and *water*.

(6) *r*-deletion in non-rhotic accent

bar	part	water
/bɑːr/ → [bɑː]	/pɑːt/ → [pɑːt]	/wɔːtəɹ/ → [wɔːtə]

The absence of rhotic sound is highly noticeable identifier, because it not only eliminates rhoticity, but also lengthens the preceding unstressed vowel which is otherwise short.

A non-rhotic accent exhibits very interesting mechanisms to prevent hiatus³, the inconvenient sequence of two adjacent vowels. Such process is called *sandhi*, and there are two types in English. One is so-called linking *r* and the other, intrusive *r*. Both mechanisms put in a rhotic approximant between the adjacent vowels. The difference lies at the source of the rhotic consonant. In the environment of linking *r*, as the name suggests, the rhotic approximant links the two vowels. Here, the rhotic consonant is not newly created, but comes from the underlying level of preceding word.

(7) Linking <i>r</i>	vs.	Intrusive <i>r</i>
Far + away = far away		China + and = China and
[fɑ:] + [əweɪ] → [fɑ:ɹəweɪ]		[tʃaɪnə] + [ænd] = [tʃaɪnəɹænd]

As shown in the comparison above, in linking the rhotic approximant, which had been deleted, comes back in order to connect the preceding vowel and the following vowel. On the other hand, intrusive *r* is a mechanism of a rhotic approximant, which never existed even in the underlying level, intrudes between

³ Hiatus refers to two consecutive vowels appearing in two adjacent syllables without a consonant in between as in *pizza and beer*. Two adjacent vowels that are not a diphthong causes inconvenience in articulation and often additional consonant is inserted.

two adjacent vowels as in *China and*. These two phenomena stand out in non-rhotic accent, and some accents can be distinguished by which mechanism they display. Non-rhotic accents with neither mechanisms tend to have a glottal stop between the two vowels in order to avoid hiatus. Moreover, rhotic accents, by design, have no intervention of linking *r*.

Chapter 3 Varieties of English

Since language is a communication tool, the linguistic pattern speakers share are formed by those who are in constant communication. That is, speakers in a close distance are highly likely to form a shared pattern of their language. In fact, most varieties are based on the geographic region. For example, Cockney is the speech of working class Londoners and is spoken in the east-central London. It has a distinct way of pronunciation and vocabulary as well as grammar. While many varieties are geographically identified, some varieties of English have little or no association with geography. Sometimes a variety of English may be of such ethnic group as African Americans (African American Vernacular English; AAVE). Sometimes it may be of sex. Fischer's research showed that boys of London area are much more likely to drop /h/ sound (1958). English may show differences according to the age group, because young speakers are more susceptible toward language change than older generations and sometimes they create new customs themselves. One of the most significant aspects that shapes a variety other than geographic features would be socioeconomic class. Labov (1966) studied New York English and found out that the pronunciation of certain sounds may vary according to socioeconomic class. Received Pronunciation, a variety of British English, has no geographical characteristic, but it is associated with socioeconomic status. This particular variety is spoken among people of upper class and upper-middle class in England including the royal family (thus the name Queen's English). In fact, Cockney is a regional

variety, but also has socioeconomic association with the working class. Varieties of English were thought to be of a small or large region or a group with certain characteristics.

3.1 Dialects and Accents

Before starting to talk about dialects and accents, the presence of Standard English needs to be discussed. ‘Standard’ may seem inappropriate to describe a variety of English, because no variety is better than others. People tend to consider the Standard English as the ‘good English’ and others as bad. Nevertheless, this is not true. Trudgill and Hannah (2008) explain that the Standard English is just one type of the English varieties that ‘has been selected, codified, and stabilized.’ This is the English for written media such as books and newspapers. A type of English used around the Royal Court in London has acquired the present form, its grammar was described, and thus the established version of English has been taught and learned at school. The Standard English is just one of varieties that many people agree to use as a shared medium. Other varieties are neither bad nor wrong, but just different. Rather, conforming to a single variety should be avoided for a language to flourish.

Ordinary people with no linguistic background often use *accent* to indicate the variety of English someone speaks. In fact, varieties of a language may be classified into two categories, dialect and accent. On the one hand, a dialect involves distinct pronunciation, syntax, and vocabulary compared to Standard English (Wells 1982). Here, pronunciation include the pronunciation of single word and the tone with

which clusters of words are spoken. Syntax, simply put, means grammar. A dialect speaker may use sentence structures and words that are different from the Standard English speakers. As introduced in the first section, a speaker from British Isles may say ‘Have you some tea?’ while speakers from America may say ‘Do you have some tea?’ using a modal.

A variety is named a dialect when it shows differences in more aspects than just pronunciation. On the other hand, an accent only involves difference in pronunciation. For example, when two speakers are using the same vocabulary and sentence structure but pronouncing them differently, they are speaking with different accents. This situation may occur even when both speakers speak the Standard English, because even Standard English may be spoken, for example, with a regional accent. In short, the term *accent* deals with pronunciation only, and the present study uses *accent* to indicate both dialects and accents, because it solely covers phonological aspect, not syntactic or semantic.

3.2 Varieties in the British Isles

Being the official language of England, English has a very long history. Great Britain consists of smaller states such as England, Scotland, Wales, and Northern Ireland, each of which has an accent specific to the region. London became the center of development as well as linguistic change. Working class Londoners has acquired Cockney, and people of prestigious class including the Royal family

developed their own, the RP. The present study examines three accents of British English, RP, Cockney, and Scottish.

3.2.1 Received Pronunciation

Received Pronunciation (henceforth RP) is an accent of British English that is familiar to most English speakers and is also known as Queen's English or BBC English. As the nicknames suggest, this is the English that people of higher class, including the Royal family and newscasters on British TV, speak. Spoken by famous figures and TV personalities, this accent has become very popular and familiar among people outside the British Isles. Moreover, this accent is taught to non-native speakers of English. Consequently, RP has become very famous, popular and familiar. Simply put, this accent of Standard English is the one that is called "British English" by the speakers of other dialects.

Trudgill and Hannah (2008) provide interesting facts regarding RP. As is well known, RP is spoken by, at maximum, 5% of English population. That means a non-native speaker who learned this accent will have much difficulty communicating with other people. Also, it is easier to learn than other accents or dialects, because the media provides an extensive and accessible language input for learning. Additionally, this accent is associated also with social class, especially upper and upper middle classes. Particularly, some speakers have so-called 'Posh' accent, also known as 'upper RP' which sometimes may not be welcomed. This derivative of RP is more typical to Royal Family and high rank military officers. Nowadays 'upper

RP' is disfavored or ridiculed by more and more people, and its speakers tend to decrease in numbers. Nonetheless, being a non-regional accent, RP has an advantage of communicability in all regions of England.

What distinguishes RP from other accents very easily is the vowels. Vowels of RP have been known to be lower and more frontal. Rounded mid back vowel /o/ is fronted and becomes mid central vowel /ə/ in words such as *goat*. Tense vowels like /u, ʌ/ are lengthened as in *noon* and *bad*. In words such as *fire*, in which three vowels appear in a row, the diphthong /aɪ/ is monophthongized into /a/. Instead, the surviving low back vowel /ɑ/ is lengthened.

(8) Vowel fronting

Goat	go	no
/gout/ → [gəʊt]	/gou/ → [gəʊ]	/nou/ → [nəʊ]

(9) Long Vowels

June	two	par
/dʒun/ → [dʒu:n]	/tu/ → [tu:]	/paɪ/ → [pɑ:]

(10) Triphthong shortening

Fire	power
/faɪəɪ/ → [fɑ:ə]	/paʊəɪ/ → [pɑ:ə]

Interestingly, above mentioned 'upper RP' takes one more step in triphthong shortening. The consecutive three vowels are contracted into one long vowel /ɑ:/. In 2003, Major General Patrick Cordingley said 'fire power' as *fa pa* with long vowels.

Below is the illustration of triphthongs shortening applied to his pronunciation of *fire power*.

(11) Triphthong shortening in upper RP

Fire power

/faɪəɪ paʊəɪ/ → [fa: pa:]

As described so far, vowels in RP exhibit very distinct features that may help identify RP. Long tense vowels, shortened triphthongs, and fronted mid back vowel are all very powerful identifiers. However, consonants can also identify RP.

The consonants of RP also present a few noteworthy features. First, lateral approximant /l/ becomes velarized at the end of a syllable. In such words as *hill* or *bill*, the word-final /l/ is velarized and becomes /ɫ/. This change only occurs to syllable finally, but not initially, thus leaving the word initial l clear in *lull* [lʌɫ]. Second, the alveolar plosive /t/ is replaced with a glottal stop when preceded by a consonant. For example, the /t/ in *batman* turns into a glottal stop, and pronounced as [bɑʔmɪn].

(12) Glottal stop replacement

Bat man

/bat.man/ → [bɑʔ.mɪn]

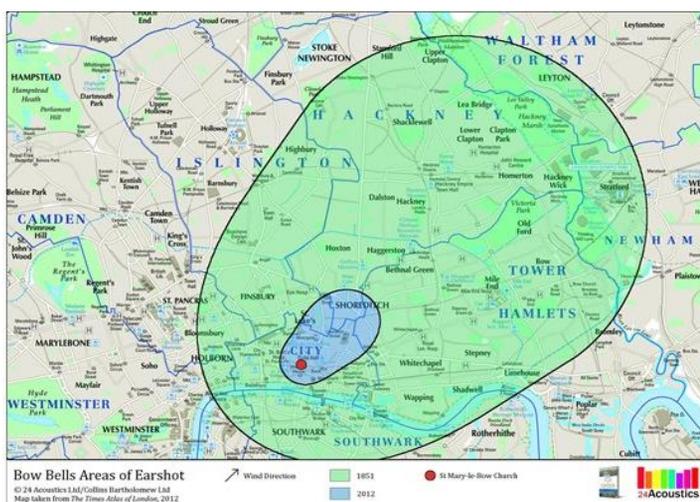
The most apparent and well-known feature of RP is non-rhoticity, or r-lessness. The rhotic approximant /r/ in the coda position is completely dropped. Another

remarkable feature is the palatalization of onset cluster in an environment where palatal glide /j/ appears between coronal plosive and high back vowel as in *tune* [tʃu:n]. The approximants /j, w, l, r/ are to be investigated in depth in chapter 4.

3.2.2 Cockney

Cockney, in general, is known as the speech of working class Londoners. Precisely, it is the speech of the people who were born and raised “within the sound of Bow Bells” (Wright 1981). It is the area within approximately a quarter of a mile radius from St Mary-Le-Bow church in Cheapside in east-central London. In the figure below, the larger oval is the hearing range of the bell when Cockney accent emerged. The dark smaller oval is the current range of the earshot of the bell. It is much smaller due to the increased density of buildings in the city.

Figure 3.1 Map of Cockney area



In a more general sense, cockney covers a broader area including Whitechapel, Plarstow, Bermondsey, Lambeth and Tottenham. Now, it vaguely describes the speech of the London area. The term cockney originates from the Middle English term *cockney* which means ‘cock’s egg.’ The term indicated an odd-shaped or unusually small egg, and later became a name for odd things. Wright (1981) suggests that the name was used by villagers living near the capital to describe or ridicule the Londoners they encountered.

Cockney dialect is different from the Standard English in many aspects: grammar, vocabulary and pronunciation. It has evolved in a very different way from Standard English. Historically, there are two theories of such deviation (Lee, 1994). One is that it started as a code in the middle of 19th century in order to prevent police or eavesdroppers from comprehending their secretive conversations. The other is that it was created to cast out workers from Ireland who came to London to build London harbor in early 19th century. Either possibility has been confirmed, but the unique vocabulary of Cockney make it very plausible. Worthy of note is that Cockney’s unique slang vocabulary is created so that it rhymes with the original word. The following is a selected list of such unique vocabulary.

(13) Cockney Rhyming Slang (Lee, 1994)

card → bladder of lard

flower → April shower

marry → cash & carry, dot & carry

talk → duke of yok

talker → Johnny Walker

brokers → engineers & stalkers

bill → pitch & fill

all right → shiny and bright

brown → up & down

cunt → national front

piss → French kiss

girl → mother of pearl

As shown above, Cockney slangs are quite difficult to understand for speakers of other dialects, especially when the context is missing. It will be even more difficult to comprehend in real time conversations, because Cockney is phonologically very distinct, too.

As distinct as the vocabulary is Cockney's pronunciation. One of the noticeable difference is the mid-back vowel. In Cockney, the rounded mid-back vowel is lowered. The vowel in words like *bold* and *roll* goes lower resulting in a low back vowel /ɑ/.

(14) Cockney Vowel lowering

Bold	roll
/boʊld/ → [bɑʊld]	/ɹoʊl/ → [ɹɑʊl]

There are more complexity with the vowel system of Cockney, but I will not go

further into it. Now we turn to the consonants of Cockney

As shocking as the slangs of Cockney is the consonant system. The most noticeable difference is the well-known fricative fronting. The voiceless and voiced (inter)dental fricatives /θ, ð/ are fronted to the labiodental position in words such as nothing and brother. As a result, they become labiodental fricatives /f, v/. *Nothing* is pronounced as *nofing*, and *brother* like *brover*.

(15) Cockney fricative fronting

Nothing	brother
/nʌθɪŋ/ → [nʌfɪŋ]	/brʌðə/ → [brʌvə]

Another noticeable difference in consonants is the vocalized laterals. In fact, this may be the most effective property in distinguishing cockney from other accents. Cockney is renowned for vocalizing syllabic l's. Wells reports multiple changes into which the syllabic l turns into a full vowel. When the vocalization occurs the syllabic lateral becomes [o, ʊ], but some researchers have also reported unrounded vowel [ɜ] after front vowels. Such change in consonants are very easy to notice as much as it is difficult to perceive. Naturally, they are very efficient indicators of an accent.

3.2.3 Scottish English

Scotland, located in the north of England, has developed and maintained their own accent. What's peculiar about Scottish English is that it is as close to GA as it

is to RP or Cockney. Unlike other British accents, Scottish English is rhotic. All rhotic approximants including syllabic ones are pronounced. Also, velarized lateral may appear in all positions.

(16) Liquids in Scottish English

better	tree
/betə/ → [betɹ]	/tri/ → [tri]

In other aspects, Scottish English is somewhat similar to Cockney. The dental fricatives /θ, ð/ are fronted to labiodental position, and become /f, v/. Consequently, *nothing* becomes *nofing*, and *father* sounds like *fa:ver*. It is also similar to RP in that palatal glide goes thorough yod-coalescence in stressed syllables. The /tj/ and /dj/ sequence palatalizes into affricates /tʃ, dʒ/.

Scottish English shows variation in diphthongs, too. The combination of low back vowel and high glide /ɑj/ starts a little higher with mid back vowel /ʌ/. Thus, *side* is pronounced as /sʌɪd/. Scottish tends to lose offglides after mid-vowels. Mid-front vowel and mid-back vowel lose their glides in *face* and *goat*.

(17) Scottish glide deletion

face	goat
/feɪs/ → [fes]	/goot/ → [got]

The characteristic of Scottish English would be summarized as rhotic, dark l, glide-deletion, and monophthongization.

3.3 Varieties in America

Although the history of English in America has not been as long as that in the British Isles, it has developed diverse variations through a rapid change in technology and social environment. Starting in the 17th century, English speakers have migrated to the American continent. Many historical events including the civil war and industrial revolution brought change to the society as well as language. Some accents remained non-rhotic, and others acquired rhoticity. Being the mother tongue of the United States with more than 200 million native speakers, American English has become the language of the globe. Among many accents of American English, the present study explores General American and Southern American Accent. General American is the standard accent in the U.S. and is also the media accent. Southern American Accent is spoken in the Southern part of the U.S.

3.3.1 General American

General American, as the name suggests, is the accent that most Americans consider common, normal and without regional, ethnic or socioeconomic relation. Like RP, this is the accent favored by the media. The newscasters and most TV personalities have this accent. Some TV figures said that they even reduced their accent to GA, in order to lose the image or stereotype that their native accent brings along. This general accent has few characteristics.

First of all, GA is a rhotic accent. The rhotic approximants, whether they are in

the onset or coda, are pronounced as orthographically dictated. *Water*, *part* and *barn* are all pronounced with the rhotic sound.

(18) Rhoticity in GA

Water	part	barn
/watəɹ/ → [watɹ]	/pɑɹt/ → [pɑɹt]	/bɑɹn/ → [bɑɹn]

It should be easily said that, in GA, every *r* in orthographic representation is pronounced without exception regardless of its position. Prevocalic, postvocalic and syllabic rhotic are all pronounced as they are written. In addition, GA allows hiatus, and therefore insertion of additional *r* between two consecutive vowels in adjacent syllables is not observed. Another consonantal difference that can be unique to GA is velarized (dark) l. Of course, other accents have velarized l, too. What is unique about GA is that it can have dark l in any positions. Trudgill and Hannah (2008) reports that the lateral approximant of GA is often velarized even in the onset position.

(19) Dark l in GA

Like	lull	pal
/laɪk/ → [lɑɪk]	/lʌl/ → [lɑl]	/pæl/ → [pɑl]

Although GA tends to be faithful in pronouncing consonants, there is one more variation. When the alveolar plosive /t/ appears between two vowels as in *better*, it turns into what's called *flap*. This strange sound is made by the tongue touching the

alveolar ridge while moving back, and transcribed like a little hook, /ɾ/.

(20) Alveolar Flap in GA

Better	sanity	seventy
/betɹ̩/ → [bɛɾɹ̩]	/sæ nɪti/ → [sæ nɛɾɪ]	/sevənti/ → [sevɻɪ]

This flap sound helps distinguish GA from other accents that has no change in /t/ or glottal stop. One exception to this flapping incident is *button* which is pronounced with a glottal stop as /bʌ.ʔn/. This happens when the stop sound is followed by the syllabic alveolar nasal /n/.

The vowels of GA also present interesting variations. The most peculiar characteristic of GA would be that it pronounces orthographic *o* with low back vowel /ɑ/, instead of rounded mid back vowel /o/. For instance, words that contain the round vowel *o*, such as *stop*, *hot*, and *lolly* are pronounced with low back vowel.

(21) Vowel lowering and unrounding in GA

Stop	hot	lolly
/stop/ → [stɑp]	/hot/ → [hɑt]	/loli/ → [lɑli]

The rounded mid vowel is lowered and unrounded. Moreover, this unrounded low vowel is also taking over mid back vowel /ɔ/ which appears in *caught* and *bought*. As a result, they rhyme with *cot*. This is a fairly recent phenomenon, but the merging is rapidly spreading.

(22) Low back vowel and mid back vowel merger in GA

bought	caught	cot
/bɔt/ → [bat]	/kɔt/ → [kat]	[kat]

Another characteristic is fronting and raising of lower back vowel /ɑ/. The words that are pronounced with /ɑ/ in other accents, such as *back*, *class* and *fat*, are pronounced with low front vowel /æ/.

(23) Low back vowel fronting and raising in GA

Back	class	fat
/bak → [bæ k]	/klas/ → [klæ s]	/fat/ → [fæ t]

The low back vowel is fronted to /a/ and then raised to /æ/. Except when it is followed by rhotic approximant as in *bar*, the low back vowel surfaces as mid front vowel.

The last characteristic of GA is so-called *yod-dropping*. GA drops the palatal glide before the high back vowel /u/ in stressed syllables. GA drops the glide in the combination of coronal stop, palatal glide and vowel /u/ as in /tju/ or /nju/. As a result, *tune* rhymes with *toon*. This is typical of American accents.

3.3.2 American Southern Accent

American Southern accent (ASA) is an accent spoken in southern part of America. It is also called southern American English, but the present study uses

American Southern accent in order to prevent confusion with the English in the continent of South America. Recent studies call it rural White southern English. American southern accent is associated with Southern states of the United States below northern states such as Pennsylvania and Kansas as the name suggests. This accent covers a vast area stretching from West Virginia in the east, and Texas in the west. Worthy of note is that Florida is excluded.

Figure 3.2 Area where Southern American Accent is spoken



The southern accent has a few interesting features. Most varieties of English tend to either lose or keep the palatal glide. However, Southern accent often adds a palatal glide where it was not present. In other words, words with short vowels acquire palatal offglide and the vowel becomes a diphthong or sometimes, even a triphthong. For instance, the vowel of *bed* is unrounded mid front vowel /ɛ/. Here,

a palatal glide is inserted after the vowel as well as a reduced vowel, and makes it a triphthong /ejə/. This process is called ‘breaking’ and very unique to Southern accent.

(24) Southern breaking

Bed	bid	bad
/bɛd/ → [bejəd]	/bɪd/ → [bɪjəd]	/bæd/ → [bæjəd]

Also, there are reports of an addition of palatal glide before low vowel /a/ in *garden*. In this case, *garden* is pronounced as /gjaɪdŋ/.

Southern accent does not only add a palatal glide, but also deletes it. It drops palatal glide between coronal stops and high back vowel as in *tune* /tun/ as GA does. Interestingly, southern accent takes one step further with j-deletion, and it drops the glide after low vowel /a/. In the process, the diphthong /ai/ in *side* monophthongizes into /a:/. It seems there was allophonic variation between social classes, but, not long ago, the monophthong dominated. Wells (1982) quotes McDavid (1967) who informed that ‘many educated Southerners now have the monophthong in all positions, and their numbers are increasing.’ Thus, Southerners have the same vowel for ride, buy, and car.

(25) Monophthongization in Southern Accent

Ride	buy	car
/ˌaɪd/ → [ˌa:d]	/baɪ/ → [ba:]	[ka:]

As illustrated in the data above, the monophthongization of /ai/ vowel to monophthong /a/ results in rhyming of *buy* and *car*. However, for these two words to rhyme, one more change is required. And it is the next property of southern accent to be discussed.

Southern accent is non-rhotic. That is how *car* rhymes with *buy*. *Buy* loses the offglide and *car* loses the postvocalic rhotic approximant. While GA acquired rhoticity, the southern part remained non-rhotic. Thus, it may seem similar to RP or Cockney, but Southern accent is unique in that it has neither linking nor intrusive *r*. McDavid (1967) points out that rhoticity is increasing among Southerners, but basically Southern accent is non-rhotic, yet.

Lateral approximant displays unusual behaviors in Southern accent. As in GA, Southerner's lateral approximant is velarized regardless of its position. It may appear in the onset and coda. Another remarkable characteristic is the way the postvocalic lateral changes. Interestingly, postvocalic lateral approximants in southern accent may either vocalize or disappear. At the word final position, the lateral vocalizes, as it does in Cockney, into /o, ʊ/. When it is followed by another consonant, it may be deleted.

(26) Postvocalic lateral vocalization and deletion

fill	help
/fiɫ/ → [fio]	/hɛɫp/ → [hɛp]

As shown in the data above, the word-final lateral vocalizes into a back vowel, and the lateral between the vowel and the word-final consonant disappears. Southern accent also shows raising of low front vowel /a/ into mid front vowel /æ/ in *power* /pæ uɹ/.

3.4 Method of analysis

Many researchers have discovered the characteristics of various English Accents. The present study uses spectrography to confirm their findings. Spectrography is a method used to analyze the frequencies of sounds. A Spectrogram presents multiple lines of amplitude peaks, formants. The lowest formant, F1 is associated with the height and the second formant. According to Catford (1988), on average, high vowels such as /i/ and /u/ have lower F1 values of around 250Hz, and low vowels such as /a/ have higher F1 values of around 800Hz. The second formant, F2 is associated with frontness of a sound. Approximately, front vowels such as /i/ have much higher F2 value of 2400Hz, and back vowels such as /u/ have lower value of 600Hz on average. Such differences in F1 and F2 values are quite useful in identifying vowels. The third formant, F3, is correlated with retroflexion. For example, the rhotic approximant has very low F3, below 2000Hz. Spectrograms are very helpful tools in mechanically identify and analyze sounds.

The speech samples were drawn from the International Dialects of English

Archive website (<http://www.dialectsarchive.com>) which compiles speech samples with short biographic information from speakers of English by their origins. The speech samples were acoustically analyzed using Praat⁴ which provides spectrograms and information on tone, pitch and frequency of the sounds. The spectrograms of the speech samples are provided and each sound of the words was marked and examined to confirm the findings of previous studies. The formant values and the patterns of wavelengths were observed to identify the sounds.

⁴ Praat is a software for sound analysis. It provides spectrograms, illustrates soundwaves and marks tone and pitch. It also automatically calculates formant values.

Chapter 4 Approximants in Different Varieties of English

4.1 Received Pronunciation

4.1.1 Palatal glide /j/ in RP

As established in the second chapter, English shows richness in words with prevocalic palatal glide before the high back vowel /u/, but only a handful before other vowels. And when the glide is followed by the vowel /u/, three variations may be observed. The glide may be pronounced as it is; it may be deleted; or it may assimilate with the preceding consonant and turn into another sound.

Interestingly, RP exhibits all three phenomena. First, in words such as *new* and *assume*, the glide is maintained. The high back vowel is stressed which prevents it from reducing to schwa.

(27) Single syllable (*new*)

nju → njʊ

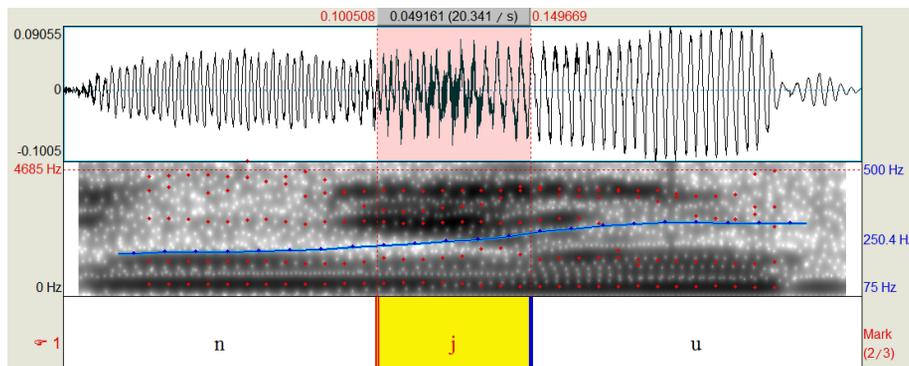
Word internal (*assume*)

ə.sjum → ə.sjʊm

In RP, as a result of j-maintaining, *new* rhymes with *few* and *view*, but not with *too* or *loo*. At the word internal position, the glide is preserved as in *assume*. This phenomenon occurs when the preceding consonant is alveolar. It is also shown in the following spectrogram⁵. It is an illustration of sound waves of *new* produced by a RP-speaking English woman in her 30's.

⁵ The sample speeches for spectrograms provided in this research were taken from the International dialects of English Archive (IDEA).

Figure 4.1 Spectrogram of *new* in RP



Although RP has not completely lost j-maintaining, it is certainly diminishing and adopting j-deletion. Trudgill and Hannah (2008) report that RP has adopted j-deletion in some words which traditionally kept the glide such as *suit*. *Suit* used to be pronounced with a glide as most middle age and older generations still do. However, the trend is changing as younger generations adopt j-deletion and pronounce it without the glide.

(28) j-deletion adopted

ʃju:t → su:t

ʃju:pər → su:pə

ilju:ʒən → ilu:ʒən

It is noteworthy that such j-deletion only appears when the preceding consonant is non-plosives.

The most interesting and distinctive change of Cju cluster in RP would be coalescence. This phenomenon occurs when the glide is preceded by coronal

plosives, /t, d/ as in *tune*, *dune*, *reduce* and *opportunity*. Through the process of palatalization, the /tj/ and /dj/ clusters transform into affricates /tʃ/ and /dʒ/.

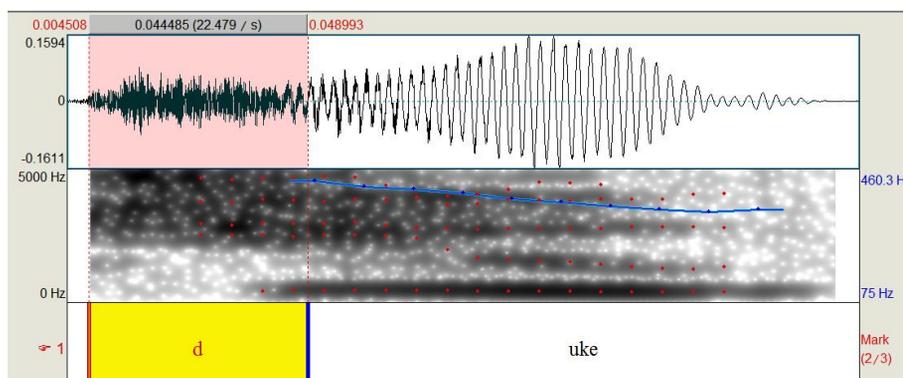
(29) j-coalescence

tju:n → ʃu:n dju:n → dʒu:n dju:k → dʒu:k rɪdju:s → rɪdʒu:s

As a result of j-coalescence, *dune* is pronounced like *June*, and *reduce* like *re-juice*. This palatalizing phenomenon is a very unique characteristic of RP. Hannisdal (2010) studied the news reports of 30 newscasters from BBC, Skynews and ITV in regard to j-coalescence. Her research examined more than 600 words that contain /tiu/ or /diu/ combination. Quite interestingly, about half of the words (46.4%) showed coalescence and the other half (53.6%) kept the glide.

The following spectrogram of *duke* is also from a RP speaker. The onset, marked as *d*, actually sounds like the voiced affricate /dʒ/. The repeated messy waves contrast the clearer waves of the voiced plosive /d/.

Figure 4.2 Spectrogram of *duke* in RP



4.1.2 Velar glide /w/ in RP

The velar glide /w/ in RP presents no accent specific characteristic. It is not deleted or change into another sound in any environment. As other varieties of English, /w/ allows any consonant except bilabials and palatal glide /j/ to conform to the OCP, and it can precede any vowel.

4.1.3 Lateral approximant /l/ in RP

In RP, when the lateral approximant /l/ comes after the vowel in a syllable, it displays a remarkable change. The body of the tongue is raised toward the velum and the lateral velarizes. As a result, so-called dark l is produced. This velarization occurs to all postvocalic laterals regardless of whether or not it is the final sound of the word or syllable. For instance, the postvocalic laterals in *fill*, *milk*, and *bottle* are all dark. In *fill*, the lateral sound is the last sound of the word, but not syllabic. In the case of *milk*, the lateral is not the last sound, and has a following plosive sound. Although *Bottle* may seem somewhat different, because the lateral approximant is syllabic and functions as the nucleus of the last syllable.

(30) Velarized postvocalic /l/

Fill	milk	bottle
/fɪl/ → [fɪɫ]	/mɪlk/ → [mɪɫk]	/batl/ → /batɫ/

Worthy of note is that this phenomenon is shared by some other varieties of English such as General American.

4.1.4 Rhotic approximant /ɹ/ in RP

RP is a non-rhotic accent, but rhoticity only concerns postvocalic /ɹ/. Thus, prevocalic /ɹ/ is always pronounced as it should be. The rhotic approximant /ɹ/ in the onset position in words such as *rice*, *row*, and *reed* are pronounced as they are orthographically represented as the following.

(31) Rhotic approximant in the onset position: RP

rice	row	reed
ɹaɪs → ɹaɪs	ɹəʊ → ɹəʊ	ɹi:d → ɹi:d

Since rhoticity does not refer to whether or not pronouncing prevocalic rhotic approximants, all varieties of English pronounce them regardless of rhoticity.

Unlike prevocalic /ɹ/, postvocalic rhotic approximant demonstrates rather colorful variations. In RP, as in any non-rhotic accent, the rhotic approximant is rarely fully pronounced in the coda position as in *water*. The rhotic sound is deleted completely, leaving the final syllable open.

(32) Postvocalic /ɹ/ in non-rhotic accent

Water	butter	far
wɔ:təɹ → wɔ:tə	bʌtəɹ → bʌtə	fɑ:ɹ → fɑ:

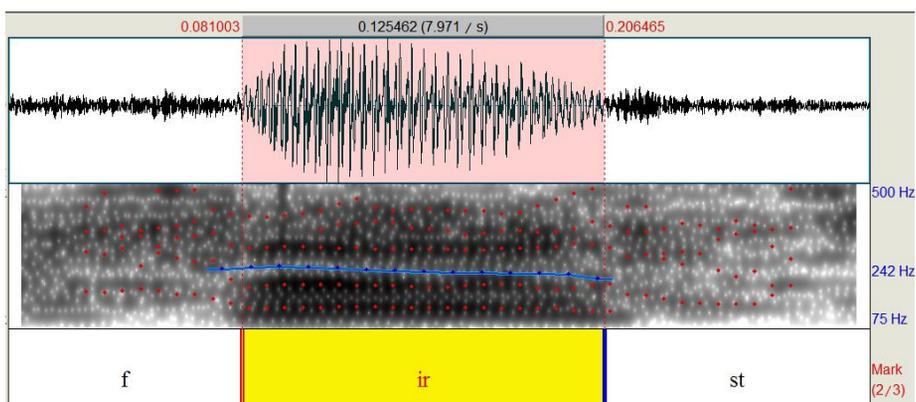
In other varieties of English, words like *water* and *butter* have syllabic /ɹ/ which functions as the missing vowel. If *butter* is to be pronounced with syllabic /ɹ/, it would be [bʌt.ɹ̩]. However, RP deletes all rhotic sounds that are not prevocalic. Therefore, discussing syllabic /ɹ/ in RP would be inappropriate, because its presence cannot be confirmed.

RP deletes all rhotic approximants that are not prevocalic. That is, it is deleted even when the rhotic sound is just a part of coda cluster as in *part*. Consequently, *part* loses its rhotic sound and rhymes with General American *pot*.

(33) Non-rhotic and rhotic accent

part (RP)	pot (GA)
/pɑɪt/ → [pɑ:t]	/pɒt/ → [pɒt]

Figure 4.3 Spectrogram of *first* in RP



The figure above is a spectrogram of *first* produced by a RP speaker. The vowel-

rhotic sequence should be present between the onset /f/ and the coda /st/, but the rhotic approximant is nowhere to be found. The vowel is marked by the dark shadows and steady formant lines. The rhotic approximant should be marked by a drop in F3 which is absent in the spectrogram. As the data proves, the postvocalic rhotic approximants are dropped in RP. Yet, there is an exception. Trudgill & Hannah (2008) describes RP's non-rhoticity as the deletion of all non-prevocalic /ɹ/. That is, even /ɹ/ in coda position survives when it becomes prevocalic through, say, conjoining with another word. The following is an example of such a phenomenon.

(34) Linking r

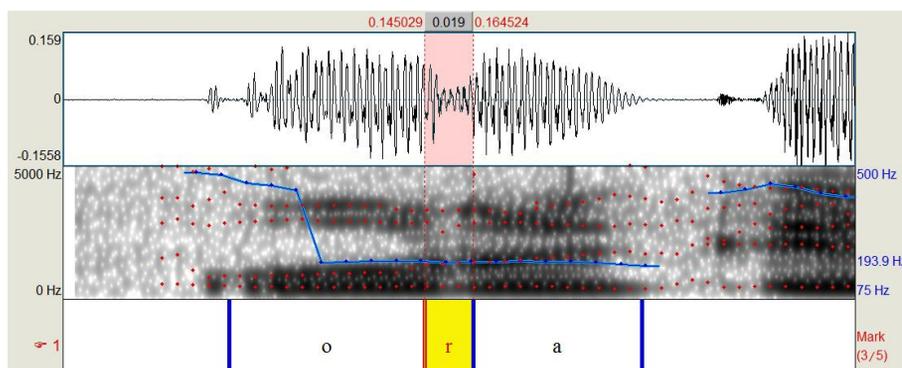
Far	far away
/fɑ:ɹ/ → [fɑ:]	/fɑ:ɹ əweɪ/ → [fɑ:ɹəweɪ]

Interestingly, the rhotic sound should be lost in *far*, but it is maintained in *far away*. As *away* comes immediately after *far*, the final /ɹ/ in *far* becomes prevocalic, and thus survives. The surviving /ɹ/ is called 'linking r' and quite characteristic of RP as non-rhotic accent.

The following spectrogram is an illustration of linking r. Here, the rhotic approximant is marked by the short break between the two vowels as well as a slight drop in F3. In most cases, the rhotic approximant in *or* would be dropped. However, it is followed by the indefinite article *a* and the environment changes to prevocalic. As a result, the rhotic comes back and connects the two vowels

surrounding it.

Figure 4.4 Spectrogram of ‘or a’ in RP



4.2. Cockney

4.2.1 Palatal glide /j/

Cockney displays very unusual and unpredictable realization of palatal glide. Unlike RP, which presents all three possible variations of palatal glide, Cockney shows one type of variation in an unusual way. Basically, Cockney is an accent of j-deletion. When the palatal glide appears before high back vowel /u/, the glide is dropped. Thus, *tune* and *dune* rhyme with *moon* and *soon*.

(35) j-deletion in Cockney

Tune	dune	moon	soon
/tju:n/ → [tu:n]	/dju:n/ → [du:n]	[mu:n]	[su:n]

This is a very remarkable distinction from RP which shows very few cases of j-deletion. Particularly, comparing the sequence of a coronal plosive, the palatal glide /j/, and the high back vowel /u/ would be an effective method to distinguish Cockney from RP.

Moreover, Cockney's j-deletion exhibits a very peculiar application. Sivertsen (1960) closely observed Cockney speakers and discovered that they display j-deletion where other accents have j-coalescence. Most varieties of English palatalizes the /ju/ sequence in *education*.

(36) J-deletion in Cockney		vs.		Palatalization in other accents
				Education
[ɛdukeɪfɪŋ]	←	/ɛdjukeɪfən/	→	[ɛdʒukeɪfɪŋ]
				situation
[sɪtueɪfɪŋ]	←	/sɪtjueɪfən/	→	[sɪʃueɪfɪŋ]

This j-deletion is very unique to Cockney. Even accents with j-deletion between coronal stops /t, d/ and high back vowel /u/ such as GA palatalizes the [coronal]ju sequence as shown in the above data. This is a phenomenon specific to the environment with coronal stop and high back vowel. In other environments such as *music*, *beauty* and *few*, the palatal glide is maintained as in other accents.

Another characteristic of Cockney's palatal glide is that it appears before or after high front vowel /i, ɪ/. This high front vowel is similar in character to palatal glide

and normally does not carry a glide. However, some words with high front vowel in Cockney have a palatal glide before or after the vowel as in *Yiddish* and *people*.

(37) Palatal glide and high front vowel i and ɪ

Yiddish	people
/ɪdɪʃ/ → [jɪdɪʃ]	/pipl/ → [pijpo]

Both tense and lax high front vowels can have a glide follow them. The result is a lengthened vowel, but it may not be easy to notice in real time conversation. The appearance of palatal glide in other environment shows a similar pattern with other accents.

4.2.2 Velar glide /w/

Velar glide generally shows no distinct variation, and appears as the underlying representation dictates. However, Cockney exhibits a distinguishable characteristic dealing with the velar glide. In most cases, the velar glide of Cockney behaves just like that of other accents before and after the vowel. As in other accents, *one* is pronounced /won/ and *bow* is pronounced /bow/. The interesting point of velar glide in Cockney is when the word with word-initial velar glide combines with another word with word-final consonant. For instance, *one* may combine with *some* and make *someone*. In this process, the velar glide comes between the consonant /m/ and the vowel /o/. Here, the velar glide is deleted.

<p>(38) Cockney w-deletion</p> <p>Some + one = someone</p> <p>/sʌm/ + /wən/ = [sʌmən]</p> <p>little + one = little un = littlun</p> <p>/lɪtl/ + /wən/ = [lɪʔlən]</p>	<p>vs.</p>	<p>Other accents</p> <p>some + one = someone</p> <p>/sʌm/ + /wən/ = [sʌmwən]</p> <p>little + one = little one</p> <p>/lɪtl/ + /wən/ = [lɪrɪ wən]</p>
---	------------	---

This mechanism works not only on complex words like *someone*, but also on two connected words when pronounced smoothly without a pause. In William Golding's *Lord of the Flies*, the bigger boys refer to little boys as *littluns* (little ones). The velar glide shows very little variation in most accents, but Cockney's velar glide presents a unique change that can be distinguished from other accents.

4.2.3 Lateral approximant /l/

Cockney displays a very curious transformation of the lateral approximant. The postvocalic lateral vocalizes into a full vowel according to the preceding vowel. When preceded by a back vowel, it vocalizes into back vowels /o, ʊ/ in *fall* and *people*. When a front vowel precedes the lateral consonant, it vocalizes into unrounded vowel /ɪ/ in *fill*.

(39) Lateral vocalization in Cockney

fall	people	fill
/fɔl/ → [fɔo]	/pipl/ → [pipo]	/fiɫ/ → [fɪɪ]

In Cockney, the lateral approximant evolved beyond syllabication, and finally becomes a full vowel. This is a very strong feature in distinguishing Cockney from other accents. On the other hand, Prevocalic lateral shows no noteworthy variation.

4.2.4 Rhotic approximant /ɹ/

As a non-rhotic accent, Cockney exhibits a very interesting variation in regard to the rhotic approximant. Non-rhoticity deletes all rhotic sounds in the coda position, and turns syllabic *r* into a reduced vowel, schwa. So far, nothing is unusual for a non-rhotic accent. The fascinating property is that Cockney has both of two types of r-sandhi. Non-rhotic accents must confront hiatus. In order to avoid hiatus, Cockney restores the deleted rhotic or inserts an additional rhotic between the consecutive vowels.

(40) Linking r in Cockney

For it

/fɔ/ + /ɪt/ = [fɔ.ɪt]

Intrusive r in Cockney

pizza and beer

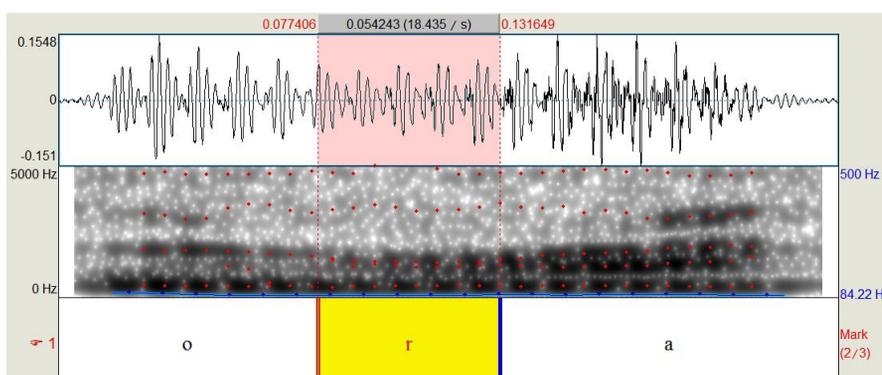
/pɪzə/ + /ənd/ + /bɪr/ = [pɪzə.ɹəndbɪr]

As shown in the above examples, the phrase *for it* is read as it is, although it should be read without the rhotic. The phrase *pizza and* is read as *pizzarand* as if there is a rhotic between *pizza* and *and*.

The following spectrogram is an analysis of the sequence ‘or a’ recorded by a Cockney speaker from London. In contrast to other postvocalic rhotic

approximants which are not present in the surface representation, the rhotic shown in the below spectrogram is fully realized. The speaker clearly says ‘or a’ with the rhotic instead of ‘o a’. The third formant drops so low that it almost touches the second, which indicates the presence of the rhotic approximant between the two vowels.

Figure 4.5 Spectrogram of ‘or a’ in Cockney



As a result of linking and intrusive r, hiatus is avoided, and Cockney acquires its uniqueness. Rhotic accents don't have r-sandhi, and even non-rhotic accents have one or none of them. This is a very useful characteristic in distinguishing Cockney.

4.3 Scottish English

4.3.1 Palatal glide /j/

The palatal glide displays more variations in Scottish than other accents. First, Scottish is an accent of yod-coalescence. When a prevocalic palatal glide meets a

preceding coronal stop before high back vowel /u/ in a stressed syllable, they get palatalized and become affricates. Thus, *tube* is pronounced as /tʃub/ as in RP. Scottish accent's uniqueness would be the postvocalic glide. Scottish deletes postvocalic glide after mid vowels such as /e, o/. *Face* becomes /fes/ and *grade* become /gred/. There are accents that delete glides, but deletion in Scottish is broader in environment. This can be contrasted with glide insertion in ASA.

4.3.2 Velar glide /w/

As discussed in the previous section, Scottish deletes more glides than other accents. Velar glide is not an exception. It is deleted after mid vowel /o/, resulting in /got/ instead of /gout/ for *goat*. This is somewhat similar to ASA's velar glide deletion. This feature may be used to distinguish Scottish in combination with other cues.

4.3.3 Lateral approximant /l/

Scottish English, like GA, may have velarized laterals in both the onset and coda, but the frequency of velarization is not high enough to serve as a sign for accent identification. More promising characteristic of Scottish lateral is that it glottalizes in the word-final position in words such as *foal*. The lateral sound is replaced with a glottal stop.

(41) Lateral Glottalization

Foal

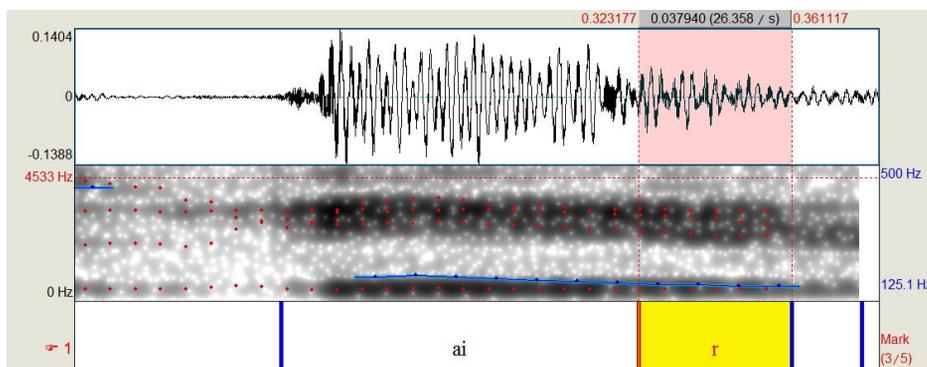
/fo:l/ → /fo:l̥ → [fo:ʔ]

In other accents, lateral approximant may fully vocalize as in cockney or be deleted as in ASA. However, in Scottish English, it is replaced by a glottal stop.

4.3.4 Rhotic approximant /ɹ/

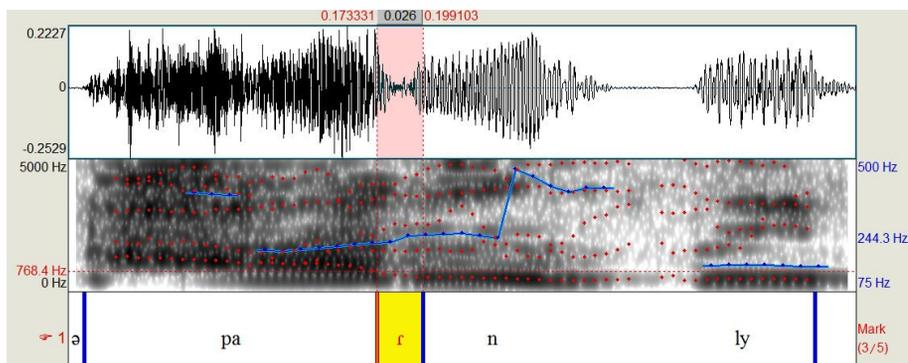
Scottish English is a rhotic accent and preserves all the rhotic sounds. *Water* is *water* and *part* is *part*. As illustrated in the spectrogram below, the postvocalic r of Scottish English is fully produced. The rhotic approximant at the syllable final position may be identified by the gradual drop of the third formant when the preceding vowel ends. As the figure below shows, the rhotic is preserved in *air* which can be identified by the drop in F3 at the end of the vowel.

Figure 4.6 Spectrogram of *air* in Scottish



However, the rhotic approximant in Scottish English sounds somewhat different from other rhotic accents. This mystery derives from the distinct way of handling prevocalic r. Scottish speakers tend to replace their rhotic approximants with a flap /ɾ/. The flap, as shown in the following spectrogram, is marked by a short break with higher F3 value in contrast to rhotic approximant's low F3 value.

Figure 4.7 Spectrogram of *apparently* in Scottish



4.4 General American

4.4.1 Palatal glide /j/

Unlike RP which displays three variations of prevocalic palatal glide, GA has one. In the environment of yod-coalescence of RP, GA deletes the glide. As opposed to RP's [tʃu:n], GA has [tu:n]. The palatal glide deletion occurs in stressed syllables, and palatalization occurs in unstressed syllables. For example, *tune* is

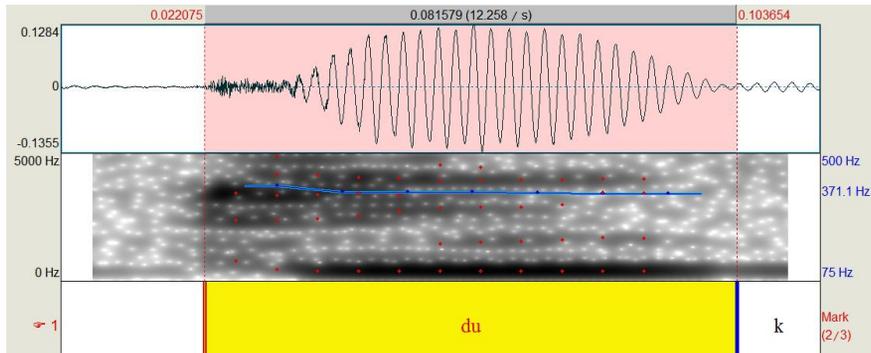
pronounced as /tu:n/, but *fortune* is pronounced as /fortʃən/.

(42) j-deletion in GA vs. palatalization in RP

			tube		
[tu:b]	←	/tjub/	→		[ʃu:b]
			dubious		
[du:bɪəs]	←	/dʒubɪəs/	→		[dʒubɪəs]

The following is a spectrogram of *duke*. There is no sign of palatal glide between the onset /d/ and the vowel. Also, the onset /d/ is unchanged as opposed to the affricate /dʒ/ of RP.

Figure 4.8 Spectrogram of *duke* in GA



The deletion of palatal glide only occurs in stressed syllables before high back vowel /u/. In unstressed syllables, the coronal+j cluster palatalizes and affricates

into post alveolar affricates as other accents do. The spectrogram above illustrates production of *duke* by a GA speaker. It clearly shows voiced alveolar plosive /d/, as opposed to RP's affricate. This phenomenon is strictly applied to stressed syllables only. In the case of unstressed syllables, the palatal glide induces coalescence as in most other accents. *Fortune* has its stress on the first syllable, and the vowel of the unstressed second syllable reduces to schwa which leads to palatalization of /tj/ cluster. This phenomenon is rather universal across accents, but it is noticeable that even j-dropping accent like GA has it, too. Additionally, lax high front vowel *i* becomes a palatal glide in *million* which is pronounced [mɪljən].

4.4.2 Velar glide /w/

GA exhibits no characteristics for velar approximant that is distinguishable from other accents. It is neither deleted nor inserted in any circumstances. The most noticeable change is that it may surface as a lax high back vowel /ɔ/. This approximant cannot serve as an identifier of GA, because many other accents present noticeable change with the velar glide.

4.4.3 Lateral approximant /l/

GA is different from RP and Cockney in that the lateral approximant may be velarized in all positions. RP only has velarized lateral in the coda position, and

Cockney vocalizes it. However, GA maintains the lateral as a coda consonant, but changes it only slightly by velarizing it.

(43) Lateral velarization

	GA	vs.	RP	vs.	Cockney
Little →	[lɪt̚]		[lɪt̚]		[lɪto]

Unfortunately, the velarization of prevocalic lateral does not always occur. Trudgill and Hannah (2008) claims that there is a tendency to do so among GA speakers, but it is not prevalent enough to identify an accent based on it. GA definitely has a higher probability of velarizing the prevocalic lateral than RP which has no dark l at all. However, a change that may or may not take place is not an effective sign to look for.

4.4.4 Rhotic approximant /ɹ/

General American is a rhotic accent, and it pronounces all rhotic consonants regardless of their positions. This is contrastive to non-rhotic accents which deletes all rhotic approximants in coda positions including syllabic *r*. Examining rhotic approximants across accents may easily distinguish rhotic accents and non-rhotic accents. However, GA shows no other unique characteristic than being rhotic, so identifying GA among other rhotic accents may not be possible.

As the name proposes, GA tends to be general and lacks regional or socio-

economical association. Consequently, it lacks distinguishable unique characteristics that other regional or socio-economical accents.

4.5 Southern American Accent

4.5.1 Palatal glide /j/

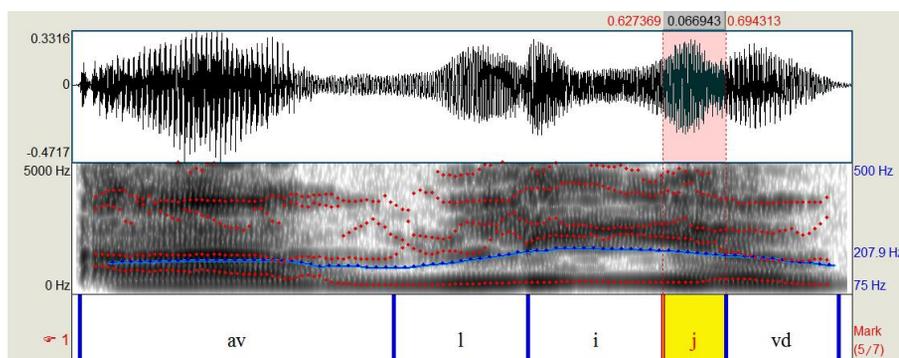
Southern American accent is renowned for its variation in intonation and pronunciation. Palatal approximant is one of the main characteristics in such variation. The most noticeable change is the deletion of offglides in diphthongs with low front vowel /a/. The diphthong /aj/ loses its glide and becomes slightly lengthened /a:/ in *my*, *wife*, and *mind*.

(44) Offglide deletion in ASA

my	wife	mind
/maj/ → /ma:/	/waif/ → [wa:f]	/maind/ → [ma:nd]

Below is a spectrogram of the phrase *I've lived* produced by a woman from Mississippi, U.S. It presents the offglide deletion in the sequence in the first part *I've*, so that it sounds like /a:v/ instead of /ajv/. The first chunk of waves is the *I've* part and the coda /v/ immediately follows the vowel. The diphthong /aj/ turns into a slightly lengthened monophthong /a:/. Apparently, it shows no sign of the palatal glide which can be observed by the drop in F1.

Figure 4.9 Spectrogram of *I've lived* in ASA



Even more interesting and distinct is that ASA inserts a palatal glide after a front vowel and makes it a diphthong. As demonstrated in the above figure, the monophthong /i/ is followed by a glide /j/. Between the vowel /i/ and coda cluster /vd/ is the glide /j/. As a result, the vowel diphthongizes into /ij/.

(45) Offglide insertion in ASA

Dead	damn	live
/dɛd/ → [dɛjɛd]	/dæ m/ → [dæ jəm]	/liv/ → [lijv]

Since a glide is always immediately adjacent to the vowel, it is highly likely to manipulate the vowel. Vowel change is very easy to notice and thus it may be a competent identifier of accents.

4.5.2 Velar glide /w/

As in many other accents, the velar approximants display little variation in ASA.

The only change it brings along is the deletion between two vowels. When the velar glide appears two vowels it is deleted leaving the two vowels only. This phenomenon is somewhat similar to glide deletion in RP.

(46) Velar glide deletion in ASA and RP
 Power
 [pɑ:ə] ← /pawə/ → [pɑ:ə]

Both accents being non-rhotic, distinguishing them by checking velar glide deletion is not possible.

4.5.3 Lateral approximant /l/

Lateral approximant in ASA exhibits more characteristic features than velar glide. First of all, the lateral may be velarized in all positions as in GA and Scottish. Whether it is in the onset or coda, the lateral approximant in ASA is always velarized. This change is noticeable, but not enough. ASA is differentiated from other accents in that it vocalizes postvocalic laterals as in Cockney, and sometimes deletes them. Postvocalic lateral, especially at word-final, is vocalized into a full vowel as in Cockney. On the other hand, a postvocalic lateral followed by a consonant is deleted. Having both vocalization and deletion is very unique to ASA.

(47) Lateral vocalization and deletion in ASA

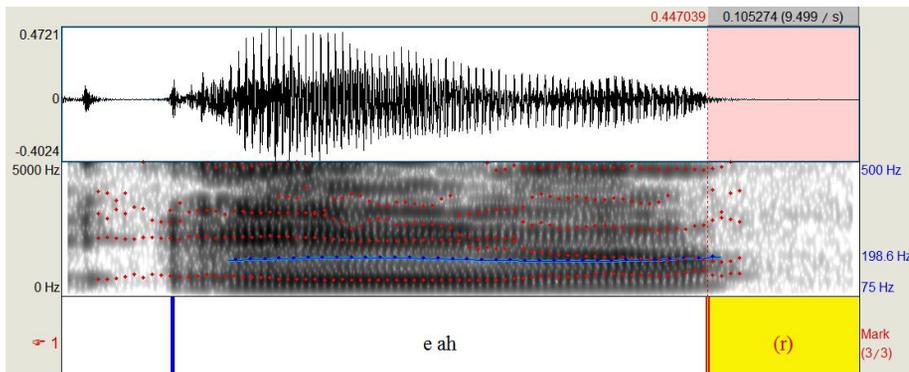
Fill wolf
/fɪl/ → [fɪo] /wɒlf/ → [wɒf]

Examining how lateral approximant is handled may not be very easy, but it can be a powerful identifier in ASA.

4.5.4 Rhotic approximant /ɹ/

ASA is a non-rhotic accent along with RP and Cockney. Rhoticity is a powerful distinguisher of accents as established in the previous chapter. The following spectrogram is an illustration of non-rhoticity in *air*.

Figure 4.10 Spectrogram of *air* in ASA



Instead of closing with a syllabic r, the rhoticity disappears and leaves a vowel /a/.

The result is /ea/ without the rhotic coda. Close examination of the spectrogram

reveals that there is no sign of the rhotic approximant after the second vowel.

Rhotic approximant is identified by the sudden drop in the F3 value, but the spectrogram below shows no sign of drop in the third formant. It is apparent that there is no rhotic sound in this sample of *air*.

Moreover, non-rhotic accents exhibit outstanding characteristics regarding rhotic approximants known as sandhi, and there are two types of it: linking and intrusive. Some accents are identified by which type of sandhi they have. Interestingly, ASA has neither, and this distinguishes ASA from RP which has linking, and Cockney which has both.

Table 4.1 Existence of r-sandhi in ASA vs. RP vs. Cockney

	ASA	RP	Cockney
Linking r	N	Y	Y
Intrusive r	N	N	Y

Although it fails to distinguish rhotic accents, the rhotic approximant is a powerful identifier of accents among non-rhotic accents.

Chapter 5 Discussion

Accents of English may be identified by multiple aspects such as stress, intonation, distinct vowels and consonants. Since consonants are more resistible against change as the history of English has shown⁶, consonants would be the easiest and most salient marker of variation. The vowels may be the second most powerful tool in distinguishing different accents, but capturing the difference between two vowels or among multiple vowels may not be easy. The present study suggests approximants, which are vowel-like non-vowels, as useful identifiers of accents. Furthermore, the approximants will be stratified according to the efficiency of identification. Based on the properties and possible changes of approximants established in the previous chapters, the different behaviors of approximants in each accent will be examined to evaluate each approximant's ability to identify different accents. Finally, more generalizable hierarchy will also be proposed.

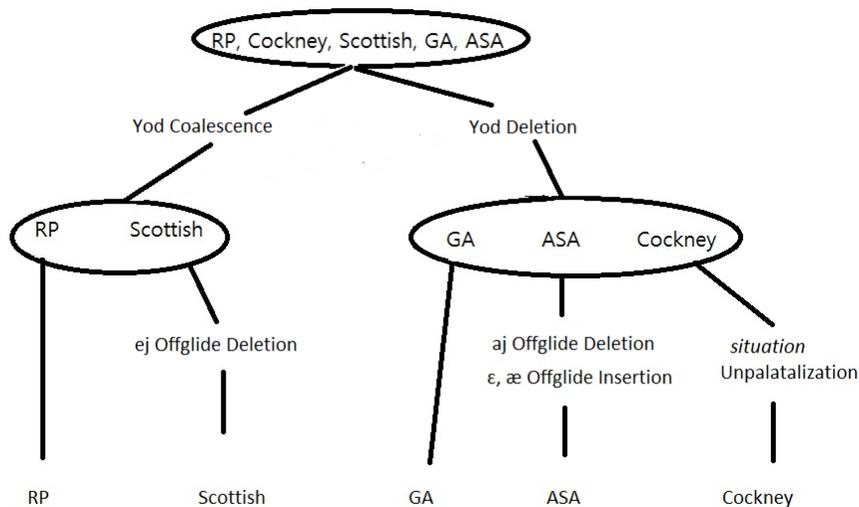
5.1 Palatal Approximant

The palatal approximant, or j-glide displays very colorful variations across accents. In RP, the glide after a coronal stop and before high back vowel triggers yod-coalescence or palatalization. This change is unique to RP and Scottish

⁶ The history of English language has shown that, when a word goes through a change, the consonants are much more likely to maintain than vowels. The Great Vowel Shift would be one of the evidences.

English. Cockney, GA and Southern accent all deletes the glide in the same environment, [cor]_u. Cockney goes even further and deletes the glide and unpalatalizes the affricate+V combination in *situation*. Scottish deletes the offglide of /ej/ in face. American southern accent may be distinguished by the insertion of glide after mid front vowel /ε, æ/ in *bed* and *bad*. Also, it deletes the offglide after low vowel /a/ in *ride*. Surprisingly, with a close examination, the palatal approximant can distinguish all five accents.

Figure 5.1 Accents identified by palatal approximant



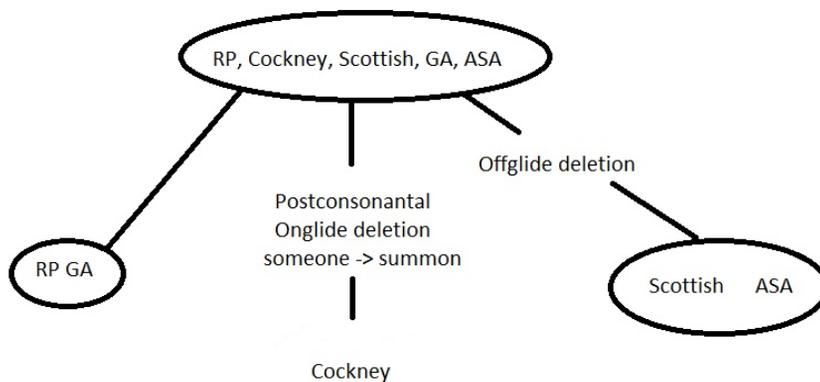
The choice of either yod-coalescence or yod-deletion can separate the five accents into two groups, one with RP and Scottish, and the other with GA, ASA, and Cockney. Then, Scottish may be identified by the /ej/ offglide deletion, and RP is

the accent with yod coalescence, but no offglide deletion. ASA can be identified by /aj/ offglide deletion and offglide insertion before mid-front vowels. Cockney is identified by unpalatalization of words with the sequence of an affricate and /u/ as in *situation*. GA is the accent with yod-deletion, but without unpalatalization or offglide insertion.

5.2 Velar Approximant

The examination of velar approximant may single out Cockney for its post consonantal onglide deletion as in *someone*. Unlike other accents, Cockney deletes the prevocalic glide when it becomes post-consonantal by combining with another word or prefix. Offglide deletion can distinguish Scottish and ASA from other accents, but these two are not distinguished from each other by the velar glide. Also, RP and GA cannot be distinguished.

Figure 5.2 Accents identified by velar approximant



The velar approximant can only identify Cockney, although it can divide the other four accents into two groups; RP and GA in one, Scottish and ASA in the other. However, it fails to separate the members of each group. RP and GA, especially, which are known as *standard* or *general* accent, exhibits no distinct characteristic in terms of velar approximant. Although it is unclear why, but the fact that standard accents presents no variation in the velar glide is worth considering.

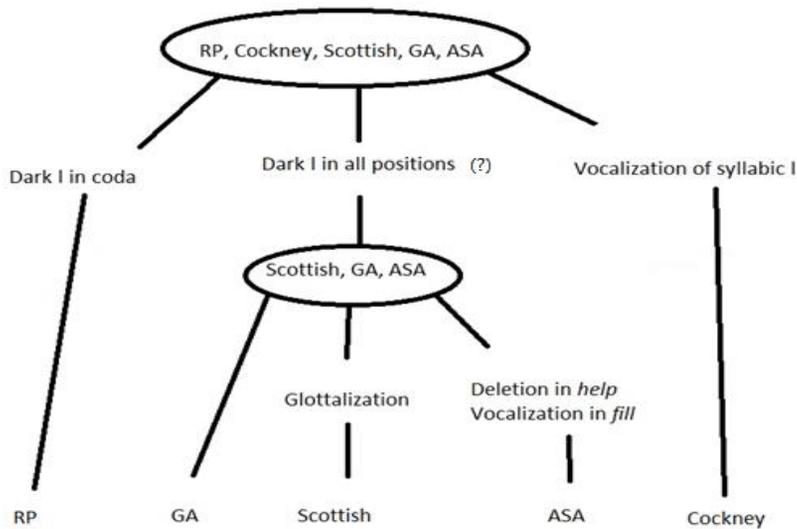
The velar glide seems to go through a minimal change as opposed to other approximants. It is speculated that it is not additionally inserted into a word with unrounded vowels due to its roundness which would require more effort to mix a round glide and the unrounded vowel. It could also account for deletion, because the deletion of the velar glide occurs between a consonant and an unrounded vowel as in RP's *tower* and Cockney's *someone*.

5.3 Lateral Approximant

Lateral approximant seems like a weak identifier of English accents. Cockney is identified by vocalization of syllabic lateral, and ASA by deletion of postvocalic lateral before a consonant and vocalization at word-final position. Scottish may be identified by the glottalization of word-final laterals. It seems that there is a possibility of distinguishing RP and GA by checking for velarized laterals in the onset position, but such phenomenon may or may not occur. A characteristic that is

sometimes shown is not a very effective marker.

Figure 5.3 Accents identified by lateral approximant



It seems the lateral approximant can only identify Scottish, Cockney and ASA.

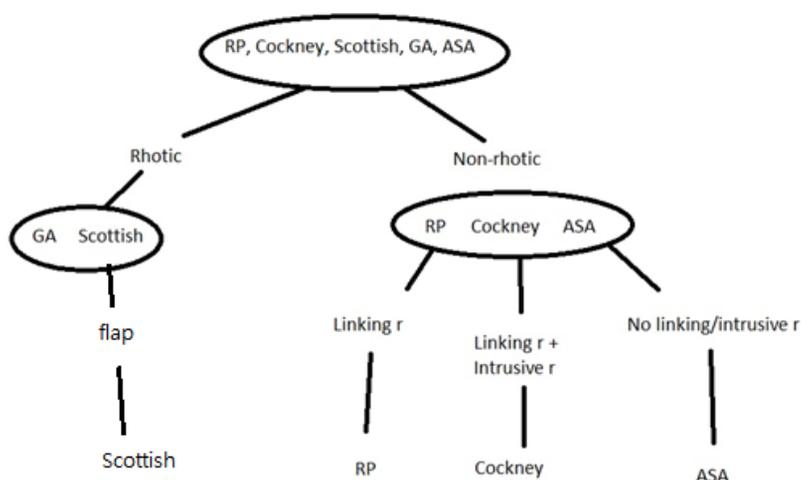
Distinguishing Cockney and ASA may not be easy due to their shared characteristic of vocalization.

5.4 Rhotic Approximant

Rhoticity is such a famous phenomenon in English accents. It seems that rhotic approximant may be able to distinguish all five accents. The two rhotic accents, GA and Scottish, may be distinguished by flaps in Scottish. The usual rhotic

approximant and flap are not very difficult to tell apart. Fortunately, non-rhotic accents also differ from each other in terms of r-sandhi. Cockney exhibits both linking and intrusive r, RP has only linking, and ASA has none.

Figure 5.4 Accents identified by rhotic approximant



Rhotic approximant is not involved in vowel-change in the two rhotic accents. However, in the three non-rhotic accents, it is involved with vowels in a way it may or may not prevent two consecutive vowels.

5.5 Hierarchy of Approximants as Accent Identifiers

The close examination in the previous sections have discovered the qualities of the four approximant consonants in five varieties of English. As it turns out, the

palatal glide has a capability to distinguish all five accents studied in this research. Each of five accents exhibits a different combination of four possible changes of palatal approximant: a) coalescence or palatalization, b) unpalatalization, c) deletion, and d) insertion. The other glide, the velar approximant, presents the weakest potential to distinguish accents. It could only identify Cockney through pre-vocalic glide deletion when two words come together. The lateral approximant seems to have the ability to recognize Scottish, Cockney, and American Southern Accent through glottalization, deletion and vocalization. In theory, it could distinguish RP and GA, too, but the velarized lateral in the onset position is not common enough to be a marker of an accent. The rhotic approximant seems very promising in distinguishing accents, because it can distinguish all five accents using rhoticity, flap replacement, and r-sandhi. Additionally, it is interesting to see that Cockney can be identified by all four sounds. Scottish English and American Southern English may be recognized by palatal, rhotic and lateral approximants. An accent with more variations is undoubtedly easier to identify.

Table 5.1 Hierarchy of approximants according to the number of accents identified

	Accents identified	Marker
Palatal	RP Scottish GA ASA Cockney	Yod-coalescence ej Offglide deletion Yod deletion aj offglide deletion, e offglide insertion unpalatalization

Rhotic	GA Scottish RP Cockney ASA	Rhotic Rhotic, flap Non-rhotic, linking r Non-rhotic, linking r and intrusive r Non-rhotic, no r-sandhi
Lateral	Scottish ASA Cockney	Glottalization Deletion, Vocalization Vocalization
Velar	Cockney	Post-consonantal onglide deletion

The table above is an illustration of hierarchy of approximants ordered according to the number of accents each sound can identify. If the hierarchy of accent identifiers was to be simply created based on the number of accents identified by each approximant, on the top of the hierarchy would be the palatal glide, followed by rhotic, lateral, and velar. Both the palatal and rhotic approximants could distinguish all five accents, but rhotic approximant is marked the second because involves more complication. The r-sandhi phenomenon can only be observed in certain conditions, so it may not be very useful as an identifier. The velar glide is the least powerful identifier because it shows no variation in many accents.

Such simple hierarchy is bound to be invalidated by adding more accents. Unfortunately, there are innumerable number of accents of countless number of languages. Recall that some accents have a distinct way of pronouncing their consonants by replacing them with another consonant, for example, as in Cockney's dental fricative fronting⁷ or RP's alveolar affrication triggered by yod-

⁷ The (inter)dental fricatives /ð, θ/ are fronted and realized as labiodental fricatives /v, f/. Refer to section 3.2.2.

coalescence and -unpalatalization. In English, vowels are more vulnerable to change than consonants, therefore change in consonants are much more convenient to pick up both by human and machine ear. Thus, checking for consonant variation would be the first step. The next priority would be to look for markers in the vowels. RP and GA are distinguished by not only rhoticity, but also the distinct sets of vowels.

(48) More generalizable hierarchy of accent identifiers.

- 1) Consonant change
In the descending order of sonority
- 2) Vowel change
Fronting, lowering, lengthening, and shortening.
- 3) Circumstantial change
Cockney's post-consonantal glide deletion
r-sandhi

The general intuition would be that vowels are better identifiers of accents because they present many variations. However, the consonant change has been found to be the most effective in marking accents, because consonantal change is rarer and easier to notice. Thus, accents with consonantal variation are much easier to pinpoint. The next is the different qualities of vowels such as lowering, fronting, lengthening, and shortening. Vowels are more likely to vary than consonants, so an accent may have a distinct combination of vowel variations. The least effective seems to be the circumstantial change which occur only in certain conditions such as r-sandhi, which only appears between two adjacent vowels in two syllables.

It is unfortunate that this study could not accommodate a larger number of accents. Examining more accents would have yielded more promising and reliable results. Two American and three British accents were studied, leaving out many other distinct accents such as Irish, Australian, Estuary English, and African American Vernacular English. Also, the data presented in the present study are reproduction of data gathered in the previous studies. The speech samples analyzed here are also from an archive whose main purpose is not linguistic research. This study would have been more convincing if it presented more reliable, newly acquired data and more authentic speech samples.

Chapter 6. Conclusion

A language varies from accent to accent, but the variation is always within the rule and constraints of the language. Identifying those rules is the key in identifying accents. Using the phonological rules of English and spectrographs, four approximants have been examined to test their capability as accent identifiers. The present study has shown that the four approximants can distinguish accents of English in varying degrees. Also, the hierarchy of the approximants according to their capability to distinguish accents of English has been proposed. Undoubtedly, the best way to identify a variety of English would be to check for all possible variations in both consonants and vowels. Such method, however, has too many variables and different environments to consider. The present study is an attempt to suggest that there be a way to prioritize the variables to check in order to identify an accent. Thus, it proposes a more general hierarchy, or an ordered checklist, which may accommodate more number of varieties. The investigation of phonological and phonetical qualities of the four approximants in relation to five varieties of English has proposed that consonants should be checked first, then the vowels.

The characteristics of accents discovered here may help study the accents of English for those who study linguistics with emphasis on dialects and accents or those who want to modify their accents. A further research will involve a bigger number of accents of English to be tested with the identifiers established in the present study. Also, based on the analysis of this study, actual perception and

identification may be tested with more speech samples and human participants in a larger scale. Such development will contribute to better understanding of English language and predicting its possible changes in the future. Even, it may extend to the application of dialect studies to other practical fields.

Bibliography

- 김우동 (1987) 미국영어의 특징. 부산여대 논문집 제 22 집
- 김진두 (2011) 영어의 전이음에 관한 연구. 영어영문학 연구 Vol 33, 4, 109-126
- 류성렬 (2002) 영어학습자를 위한 현대 영미어의 비교연구. 영어영문학 연구. V44. 4.
- 박영배 (2002) 영어 방언 연구. 어문학논총 제 21 집 국민대학교
어문학연구소.
- 방희돈 (2008) 미국영어 방언의 소고. *Journal of American-Canadian Studies*
- 이미재 (1994) 런던영어:Cockney 에 대하여. 어학 21, 145-166.
- Algeo, J. (2003) The Origins of Southern American English. In Stephen Nagle & Sara Sanders (Eds) *English in the Southern United States* (6). Studies in English Language.
- Baertsch, K. (2008). Asymmetrical Glide Patterns in American English: The Resolution of CiV vs. CuV Sequences. *Langtulle Research* 44.2, 223-240.
- Barlow, J. (1996) The Development of On-glides in American English. Proceedings of the 20th Annual Boston University Conference on Language Development.
- Biadys, F. (2011) Automatic Dialect and Accent Recognition and its Application to Speech Recognition. Dissertation. Columbia University.
- Borden, G., Harris, K. & Raphael, L. (1994) *Speech Science Primer: Physiology, Acoustics, and Perception of Speech* (3rd ed., pp. 1-13). Baltimore: Williams and Wilkins.
- Cheshire, J. (2009) *Variation in an English Dialect*. Cambridge Studies in Linguistics. Cambridge University Press.
- Catford, J. (1988) *A Practical Introduction to Phonetics*, Oxford University Press
- Dorrill, G. Sounding Southern: a Look at the Phonology of English in the South. In Stephen Nagle & Sara Sanders (Eds) *English in the Southern United States* (119). *Studies in English Language*.
- Drobot, I. Phonological Features of Cockney English Illustrated in My Fair Lady.

- Glain, O. (2012) The yod /j/: palatalise it or drop it! How Traditional Yod Forms are Disappearing from Contemporary English. *Cercles* 22. 4-24.
- IDEA. International Dialects of English Archive. <http://www.dialectsarchive.com>
- Johnson, W. & Britain, D. L. Vocalisation as a Natural Phenomenon. Unpublished Paper. Essex University.
- Jones, C. (2002) *The English Language in Scotland: An Introduction to Scots*. East Linton: Tuckwell
- Jones, D. (1917) *Cambridge English Pronouncing Dictionary*. Cambridge: Cambridge University Press.
- Jung, D. (2001) A Study on the Dialects of American English. *Study of Social Science*. 11.
- Hannisdal, B. (2010), What's Happening in RP? An empirical look at variation and change in Received Pronunciation. Presented at Phon&Phon Meeting at Uniwersytet IM. Adama Mickiewicza W Poznaniu. 2010.10.12.
- Hammond, M. (1999) *Phonology of English: A Prosodic Optimality Theoretic Approach*. Oxford: Oxford University Press
- Hughes, Trudgill P. and Watt (2005) *English Accents and Dialects*
- Kövecses, Z. (2000) *American English: An Introduction*. Peterborough, Canada: Broadview Press.
- Labov, W., Ash, S. & Boberg C. (2006) *Phonological Atlas of North American English*. Berlin: Mouton de Gruyter.
- Phillips, B. (1994) Southern English Glide Deletion Revisited. *American Speech*. Vol 69, No 2. 115-127
- Przedlacka, J. (2001) Estuary English and RP: Some Recent Findings, *Studia Anglica Posnaniensia* 36
- Przedlacka, J. (1994) Pronouncing Estuary English. *English Today* 10, 4: 3-7.
- Roach, P. (2004) British English: Received Pronunciation. *Journal of the International Phonetic Association*. 34/2. UK.
- Roca, I. & Johnson, W. *A Course in Phonology*. UK: Blackwell Publishing

- Roy, J. "Hey, Y'all: Southern Accents Voted Most Attractive", *Time*. Time Mag., 11 Nov. 2013. Web. 23 Sep. 2015.
- Santipolo, M. (2003) On the Opposite Sides of the Continuum: Standard British English and Cockney. A Historical Outline of the Parallel Development of the Two Varieties. *Studi Linguistici e Filologici Online*. V 1.
- Scobbie, J., Gordeeva, O. & Matthews, B. (2006) Acquisition of Scottish English Phonology: an overview. *QMUC Speech Science Research Centre Working Paper 7*
- Sivertsen, E. (1960) *Cockney Phonology*. New York: Oslo University Press.
- Stuart-Smith, J. Scottish English: phonology." In: Kortmann, B., Burridge, K., Schneider, E.W., Mesthrie, R. and Upton, C. (eds.) *A Handbook of Varieties of English: 1: Phonology*. Mouton de Gruyter: Berlin, Germany, pp. 47-67. 2004
- Thomas, E. R. (2001) An Acoustic Analysis of Vowel Variation in New World English. *American Dialect Society* 85. Durham, NC: Duke University Press.
- Thomas, E. R. (2005) Rural White Southern Accents in Varieties of English: The Americas/Caribbean, edited by E. W. Schneider. (Mouton de Gruyter, Berlin, Germany), pp. 300–324.
- Thomas, E. R. (2007) Phonological and phonetic characteristics of African American Vernacular English. *Language and Linguistics Compass*. 1.
- Toft, Z. (2002) The Phonetics and Phonology of some Syllabic Consonants in Southern British English. *ZAS Papers in Linguistics* 28, 111-144.
- Trudgill, P. (1984) *Language in the British Isles*. Cambridge UK: Cambridge University Press.
- Trudgill, P. (1999) *The Dialects of England*. 2nd edition, Blackwell Publishers
- Trudgill, P. & Hannah, J. (2008) *International English: A Guide to the Varieties of Standard English*. 5th edition, London: Hodder Education.
- Wakelin M. (1972) *English Dialects: An introduction*. London: Athlone Press.
- Walker (1791) *Critical Pronouncing Dictionary and Expository of the English Language*.
- Wells. J. C. (1982) *Accents of English: An Introduction*. Cambridge UK:

Cambridge University Press.

Wells, J. C. (1982) *Accents of English 2: The British Isles*. Cambridge UK:
Cambridge University Press.

Wells, J. C. (1982) *Accents of English 3: Beyond the British Isles*. Cambridge UK:
Cambridge University Press.

Wright, P. (1981) *Cockney Dialect and Slang*, Billing and Sons Ltd.

국문 초록

접근음을 통한 영어 방언 구분

영어는 다양한 특성을 가진 방언들을 다수 가지고 있다. 이 방언들은 지역, 사용자의 성별, 연령, 사회경제적 지위 등 여러 요인들에 따라 차이를 보인다. 각 방언의 특성을 연구함으로써 우리는 영어를 더 깊이 이해할 수 있게 된다. 이 연구는 영어의 다섯 가지 방언, Received Pronunciation, Cockney, Scottish English, General American, 그리고 American Southern Accent 을 살펴본다. 이 다섯 가지 방언을 경구개, 연구개, 설측, 권설 등 네 가지 접근음을 위주로 살펴 보았다. 위의 네 가지 접근음이 각 방언에서 보이는 변화를 관찰하면 이 소리들이 방언을 얼마나 효과적으로 식별할 수 있는지 알 수 있게 된다. 각 소리는 서로 다른 개수의 방언을 식별해 내었으며 그 개수에 따라 계층화되었다. 경구개 접근음과 권설 접근음은 각각 다른 변화과정을 확인함으로써 다섯 방언을 모두 식별해 내었다. 다음은 설측 접근음으로, 연구개음화 과정의 식별이 까다롭고 불규칙적으로 나타나는 현상이어서 세 개의 방언만이 식별 가능하였고, 연구개 접근음은 방언 간 차이를 거의 보이지 않아 하나의 방언 밖에는 식별하지 못 했다. 이러한 발견과 각 방언의 특성들을 살펴본 결과, 방언의 식별에 있어서 변화에 가장 저항력이 크고 차이가 두드러지는 자음이 가장 효과적이며, 그 다음은 변화에 대한 저항력이

상대적으로 작아 다양한 변화를 보이는 모음, 그리고 마지막이 특정 조건에서만 발현되는 조건적 변화들이 밝혀졌다.

주요어: 접근음, 전이음, 유음, 영어 방언

학번: 2012-20022