CHAPTER 2

THEORITICAL OF FRAMEWORKS
THE ASSIMILATION ANLYSIS ON MEGHAN TRAINOR'S
SINGING ARTICULATION THROUGH PHONOLOGY APPROACH

As the previous chapter has said, Phonology is a branch of linguistics that studies speech sound on how to organize and influence each other. In connected speech, the pronunciation of a word will change depending on the words around it. When there is a sound can change pronunciation because the phoneme has influence each other. It calls assimilation. Assimilation is one of the aspects of connected speech. Assimilation has a theory about sound changes to speak fast with native speakers of English. This chapter, I will explain about phonemes, there is vowel and consonant. I also explain about three types of assimilation and consonant changing. Assimilation has a theory about sound changes to speak fast with native speakers of English. I will describe some theories and ideas which are used to the study.

I use Phonology approach and theory Assimilati on based on *English Phonetics and Phonology book by Peter Roach. Cambridge University 1983*.This is to prove how assimilation occurs in Meghan Trainor's singing articulation and what kind of the most types of assimilation happens in her singing. This is also to know how assimilation process in her singing articulation. Phonology approach is very important because it will be used as the basic foundation to conducting this research. Theory Peter Roach is used to analyze types of assimilation (regressive, progressive and reciprocal.), and consonant changes in assimilation (place of articulation, manner of articulation, and voicing). I also explain those theories briefly and clearly.

2.1 Phonemes

Phoneme is basic unit of speech distinguishing one word from another in particular language. The difference in meaning between the English words *kill* and *kiss* is a result of the exchange of the phoneme /l/ for the phoneme /s/. Two words that differ in meaning through a contrast of a single phoneme form a minimal pair. A phoneme may have more than one variant, called an allophone, which functions as a single sound; for example the p's of "pat", "spat" and "tap" differ slightly phonetically, but that difference, determined by context, has no significance in English.

In linguistics a phoneme is the smallest sound unit in a language that is capable of conveying a distinct meaning, such as the s of sing and the r of ring. So, while there are infinitely many different sounds for any given language there are only finitely many phonemes, and the upper limit is around 120 while English has 40. This level focuses on the smallest unit of structure in language, the phoneme. Linguistic rules at this level describe how sounds are pronounced in various contexts. Phonemic is a part of descriptive linguistics, which undertakes to describe a language, no more and no less than that.

There are a great many things that can be done about a language, other than just describing it. The solution is to adopt a phonetic alphabet which always has the same spelling for the same sound. Linguistic use phonetic alphabet called the International Phonetic Alphabet (IPA). Many IPA letters are the same as those of the English alphabet, so we place IPA spellings in square brackets to indicate that they are phonetic spellings. Note that many dictionaries give phonetic spellings as pronunciation guides, but not all dictionaries use the IPA. This was a radically new idea compared to the earlier treatments of phonetics, for now the phonetic alphabets were shown up as mere lists, and as lists they had no system, no structure. It begins by noticing some system, some patterns, which is already clear without the help of phonemic theory.

In written language they are represented by just one symbol. Thus, one distinguishes a phone (sound) from a phoneme (set of sound). While phones are language independent, phonemes are not. For example, the letter /p/ has two distinct realizations, an aspirated and un-aspirated one. The sounds of a language change slowly over time. If we could hear a tape recording of English spoken, says, one or two hundred years ago in one and the same region, we would surely notice difference. The good side about a stable writing system is that we can read older texts even if we do not know how to pronounce them.

Phonemes can occur because the pronunciation of speech sound has influence between phonemes with another. There are 26 phonemes (a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z) which divided into vowel and consonant sounds. The example from "linguistic" word is become /l/, /i/, /n/, /g/, /u/, /i/, /s/, /t/, /i/, /c/. Phoneme can be divided into vowel and consonant sound. Sometimes, it is difficult to compare the sound of these two phonemes. Consonant have a more phoneme than vowel.

2.1.1 Vowel

Basically, a vowel is a sound that is made with the mouth and throat not closing at any point. Vowels are pronounced with an open vocal tract. Therefore, the tongue does not touch the teeth, lips or the roof of the mouth when pronouncing vowel. It is important to notice that the term vowel can refer to both vowel sounds and vowel letters in the alphabet. The English alphabet has 26 letters. Each letter has a lower and upper case form. The letter of vowels are; a, e, i, o, u, ə. A vowel is a letter of the alphabet that represents a speech sound created by the relatively free passage of breath through the larynx and oral cavity. As pointed out below, spoken English has approximately 20 distinct vowel sounds, though there are dialectal variations. According to Peter Roach (1983:10) *"The words vowel and consonant are very familiar ones, but when we study the sounds of speech scientifically we find that it is not easy to define exactly what they mean. The most common view is that vowels are sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips."*

In Phonetics, a vowel is a sound in spoken language, as the English "ah!" [a:] or "oh!" [oʊ], pronounced with an open vocal tract so there is /a/ in sound "ah!" with open mouth and /o/ with /ʊ/ in "oh!" when it spoken but close-back. *There are weak and strong forms in vowel sounds. The strong syllables are stressed and weak syllables are unstressed, but it describe what "stress" means such a description would not be very useful. All full vowels may occur in unstressed position.* Another example of vowel sounds; (i) see /si:/ and (ɪ) /sɪt:/ . Vowel has two form; long and short vowels.

Picture 2.1 the Production of Vowel Sounds
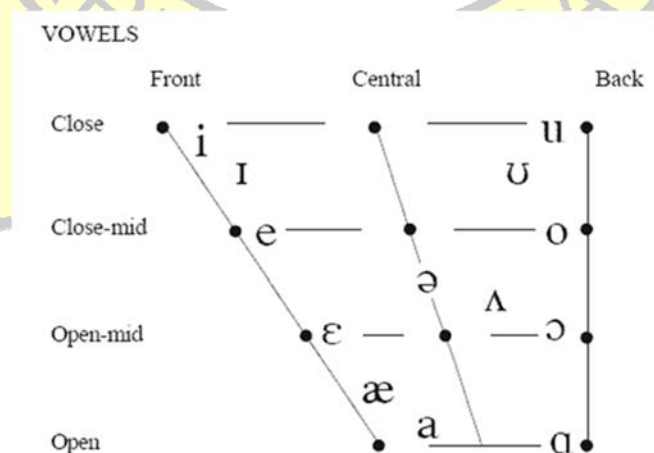
The tables describes manner of articulation in vowels. That also describes how our tongue moves when we utter a word that has those vowels. There are long and short vowels. Vowels sometimes become a strong form and weak form.

2.1.1.1 Strong and Weak Form

In phonology, there are two forms of English words that can be pronounced. The following is the explanation about strong weak form.

There are two different ways to pronounce English words, which are called strong and weak forms. The strong forms are when native speakers of English utter English words with full sound. The example is the word 'that' can be pronounced /ðæt/ (strong form) and /ðət/ (weak form). It is possible to use only strong forms in speaking, and some foreigners do this. Usually they can still be understood by other speakers of English (Peter Roach 1983:86).

There are two main reasons; firstly. Most native speakers of English dins an "all-strong-form" pronunciation unnatural and foreign sounding. Secondly, speakers who are not familiar with the use of weak forms are likely to have difficulty understanding speakers; since practically all native speakers of British English use them.

Unaccented, they take on a reduced quality and are 12 therefore called weak forms. They can be identified by various characteristics. "The unaccented weak forms show reductions in the length of sound, obscuration of vowels towards /ɪ/, /ʊ/, and the elision of vowels and consonants" (Gimson 1994, p.228). Those function words that have a possibility of weak realization often become weak in connected speech. They are pronounced in their strong forms when the speaker wishes to contrast or emphasize the word, or if the word is pronounced individually. Also, function words are always stressed at the end of a sentence, as opposed to weak forms at the beginning and in the middle of a sentence.

Kelly (2002) argues about weak forms that "it is important that learners are taught the possible forms of these words when they are introduced because they should be given the opportunity of becoming attuned to them" (p.75). Kelly (2002) also claims that "native speakers tend not to notice features of connected speech when they are used, but do notice when they are not". But Roach argues that there are roughly forty such words in English. Listed below are some of the most frequent function words that have both weak and strong realizations as defined by Kelly (2002).

The weak forms are syllable sounds that become unstressed in connected speech and are often then pronounced as a schwa/ə/. Weak forms belong to the closed class category of words that is called functional words grammatical words. In English, as in all other languages, functional words do not have a dictionary meaning the way content words, those of the open class category such as verbs, adjectives, articles, conjunctions, prepositions. Their main function is to serve as 'grammatical cement' holding content words together, as well as maintaining relationship between higher syntactic units such as phrases and clauses (Collins & Mees, 2003).

There are many kinds of weak forms that used:

1. 'HIT' (when it occurs before a noun)

   Weak form: ɪ

   "I hit you" /Ai hɪt ju/

2. From (preposition)

   Weak form: ə

   "Where are you from?" /weər ər ju frəm/.

3. 'HER' (when used with possessive sense, preceding a noun; as an object pronoun, this can also occur at the end of a sentence)

   Weak form: ə

   ə (before consonant) : "Tahe her home" /Teik ə 'həʊm/

   ər (before vowel)   : "Take her out" /Teik ər aut/

The sound /ə/ is a symbol phonemic of Schwa. Schwa is often happen in weak forms. Schwa is the name for the most common sound in English. It is a weak, unstressed sound and it occurs in many words.

The Strong forms are used only when the words are stressed, example when it is the last word. The strong form is used when the functional word occurs in isolation, i.e. out of context. It is used when the word occurs in the final position of the sentence. Pronouns such as 'his', and 'us' may remain weak in final position.

There are many kinds of strong form that used;

1. 'HAVE' (auxillary verbs)

   Strong form: æ

"I have to go" /Ai hæv tu gə/

2. 'Cup' (noun)

    Strong form: ʌ

    "A cup of tea" /a cʌp ɒf ti/

3. 'From' (preposition)

    Strong form: ɒ

    "Where are you from?" /weər ʌr ju frɒm/

2.1.2. Consonant

A consonant is a basic speech sound that is articulate with complete or partial closure of the vocal tract. The word consonant is also used to refer to a letter of an alphabet that denotes a consonant sound. The 21 consonant letters in the English alphabet are b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, x, z, and usually w and y. The letter y stands for the consonant /j/ in yoke, the vowel /ɪ/ in myth, the vowel /i/ in funny, and the diphthong /aɪ/ in my, /w/ always represents a vowel letter, as in growth, raw, and how.

Most people would have no doubt that sounds like /s/ and /d/ should be called consonants. However, there are many cases where the decision is not so easy to make. One problem is that some English sounds that we think of as consonants, such as the sounds at the beginning of the words "hay" and "way", do not really obstruct the flow of air more than some vowels do.

According to Peter Roach (1983:10), *in articulatory phonetics, a consonant is a speech sound that is articulated with complete or partial closure of the vocal tract. Example are /p/, pronounced with the lips; /t/, pronounced with the front of the tongue; /k/, pronounced with the back of the tongue; /h/, pronounced in the throat; /f/ and /s/, pronounced by forcing air through a narrow channel (fricatives); and /m/ and /n/, which have air flowing through the nose (nasals). Contrasting with consonants are vowels.*

Since the number of possible sounds in all of the world's language is much greater than the number of letters in any one alphabet, linguist have devised systems such as the International Phonetic Alphabet (IPA) to assign a unique and unambiguous symbol to each attested consonant. In fact, the English alphabet has a fewer consonant letters than English has consonant sound, like "ɔh", "sh", "th", and "zh" are used to extend the alphabet, and some letters and digraphs represent more than one consonant than the "th" sound in "thin", in the IPA they are transcribed /ð/ and /θ/.

Consonants have a syllables, syllable is a piece or fragment of a word. Syllable is a structural unit and within that structure which can identify a sequence off consonants (c) and vowels (v). Syllable as units of phonological analysis mainly because they influence the realization of allophones; put in another way, they affect allophonic distribution of phonemes. In Englsih words as example; "can" has one syllable and "study" has two syllables, stu-dy.

A syllable pronunciation is composed of a vowel sound, and these syllables may overlap with a consonant, it may not. A syllabic consonant is a consonant which either forms a syllable on it is own, like the *m, n*, and *l,* in the English words *rhythm, button,* and *bottle*, or is the nucleus of a syllable, such as the *r* sound in the American pronunciation of work.

This is syllables of consonant phonemes on the table below;

		Place of Articulation												
		Bilabial		Labio dental		Inter dental		Alveolar		Alveo-palatal		Palatal	Velar		Glottal
Manner of Articulation	Stop	p	b					t	d				k	g	ʔ
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ				h
	Affricate									tʃ	dʒ				
	Nasal		m						n					ŋ	
	Lateral Approximant								l						
	Retroflex Approximant								ɹ						
	Glide	ʍ	w									j			
		State of the Glottis													
	Voiceless							Voiced							

This is explanation of the chart of the table above.

a. Manner of Articulation
   1) Plosive   : A complete closure is made somewhere in the vocal tract and the soft palate is also raised. Air pressure increases behind the closure and is then released explosively. Example /p/ and /b/

   2) Affricate   : A complete closure is made somewhere in the mouth, and the soft palate is raised. Air pressure increases behind air closure and there leased more slowly than in plosive. Example /tʃ/ and /dʒ/

   3) Fricative   : When two vocal organs come close enough together for the movement of air between them to be heard. Example /f/ and /v/

4) Nasal   : A closure is made by the lips, or by the tongue against the palate, the soft palate is lowered, and air escapes   through the nose. Example /m/ and /n/

5) Literal   : a partial closure is made by the blade of the tongue against the alveolar ridge. Air is able to flow around the side of the tongue. Example /I/

6) Approximant   : vocal organs come near to each other but not so close as to cause audible friction. Example /r/ and /w/.

b. Place of Articulation

1) Bilabial   : using closing movement of both lips. Example /p/ and /m/

2) Labio-dental   : using the lower lip and the upper teeth. Example /f/and /v/

3) Dental   : the tongue tip is used close to the alveolar ridge. Example /e/ and /ð/

4) Alveolar   : the blade of the tongue is used close to the alveolar ridge. Example /t/ and /s/

5) Palato-alveolar : the blade (or tip) of the tongue is used just behind   the alveolar ridge. Example /tʃ/ and /dʒ/

6) Palatal   : the front of the tongue is used against the soft   palatal. Example /j/

7) Velar   : the back of the tongue is used against the soft palate. Example /k/and /ŋ/

8) Glottal   : the gap between the vocal cords is used to make audible fiction. Example /h/.

2.2 Assimilation

Assimilation is the one of connected speech how to speak fast. This is often used with native speakers to communicate. The term assimilation usually refers to contextual variability of speech sounds, which is said to be caused by the influence of one sound upon another. It is often defined as a process of replacing one sound (or changing some properties of a sound) under the influence of another sound which occurs near to it. It has also been characterized as an adjustment of speech

sounds to their environment. According to Peter Roach (1983:10), *"Assimilation is how the phonemes of a particular word would be realizes when the word was pronounced in isolation, when we find a phoneme realized differently as a result of being near some other phoneme belonging to a neighboring word."*

The phonemes of assimilation are:

1.   /t/ changes to /b/ before /m/ or /b/ and /p/
2.   /n/ changes to /b/ before /m/ or /b/ and /p/
3.   /n/ changes to /ŋ/ before /m/ or /k/ and /g/
4.   /t/ changes to /k/ before /m/ or /k/ and /g/
5.   /d/ changes to /g/ before /k/ or /g/
6.   /d/ changes to /ŋ / before /k/ and /g/
7.   /s/ changes to /ʃ/ before /ʃ/ and /j/
8.   /z/ changes to /ʒ/ before /ʃ/ or /j/
9.   /θ/ changes to /s/ before /s/

The above regarding the phonemes assimilation explains that phonemes can influence each other to produce a different sound or make a new sound in every word. The example from alveolar nasal is "sandwich" /sænwɪč/ → /sæmwɪč/. When alveolar nasal /n/ is affecting the bilabial /w/, the nasal /n/ becomes bilabial /m/ and the dental /d/ is voiceless. The sound change rarely occurs in vowel letters because the sound generated is not experiencing barriers.

2.3 The types of Assimilation

    Assimilation is the alteration of speech sound to make it more similar to it is neighbors. It is the process of simplification by which a speech sound is influenced by the surrounding sounds to make them more similar. Assimilation can divide into three type; progressive assimilation, regressive assimilation, and reciprocal assimilation.

2.3.1   Progressive Assimilation

According to the Peter Roach, assimilation can happens where two words are combined, the first of which ends with a single final consonant (which we will call Cf: Consonant final) and the second of which starts with a single initial consonant (which we will call Ci: Consonant initial). If Ci changes to become like Cf in some way, it is called assimilation progressive.

This types occurs when in the sequence of segment AB, segment A (first) exert influence on segment B (second). We can say that A is assimilator while B is assimilated. The example is the sound "get them" into "gɛt əm" not pronounced as "gɛt dəm" because the word 'get' ends in the alveolar /t/ ; the word 'them' with the interdental /d/, when the two are combined becoming "get them" the interdental /d/ is often pronounced like the preceding sound, /t/. Influence is left to right.

A   B   (Progressive) Influence is left to right.

2.3.2   Regressive Assimilation

According to Peter Roach, regressive assimilation is most likely to be towards an easier consonant-one which makes less obstruction to the airflow. It is thus possible to find cases where a final plosive becomes a fricative or nasal, but most unlikely that a final fricative or nasal would become a plosive.

Example: That side   → (dæs said)

Good night → (gʊn nait)

In regressive, the assimilated sound creates a new sound. Regressive assimilation occurs when the final sound of the preceding word becomes similar to initial word. The example is the sound of "that page" into "dæt pedʒ", the alveolar /t/ changes to /p/ because the second word, page begins with a /p/. It happens when the final consonant affect in the initial.

A   B   (Regressive) Influence is right to left.

2.3.3   Reciprocal Assimilation

Reciprocal Assimilation occurs when the sequences of segment AB, segment B exert influence on segment A, and at the same time segment A influence on segment B. So, A and B are assimilator. This is when two sounds combined and produce the new sound. In another references, reciprocal is familiar named coalescent. The coalescent happens when some sound meet /y/. For

example when /d/ sound meet /y/ sound in "they called you" (ðei ka:ld ju) becomes they called you (ðei ka: ldʒu:). The two phonemes are influence each other and make a new sound. The process of dental sound /d/ meet /y/ →/j/ is produce a new sound /dʒ/

Reciprocal Assimilation also divided into two types. They are:

1. Non-coalescent Reciprocal Assimilation

   This assimilation occurs when the two sounds influence each other reciprocally, and the result is such that both sounds receive some future reciprocally, but they nevertheless remain relatively autonomous.

2. Coalescent Reciprocal Assimilation

   This is a process in which to segment merge into one, and a qualitatively new sound (assimilated) is formed. Example words from "get you" /t/ ↔ /j/ → /tʃ/

2.4 Consonant changing in Assimilation

In phonology, consonants are rather influencing words to occur the assimilation. Depending on the type of feature that spreads from one segment to another we can observe several major types of assimilation such as assimilative processes involving voicing, manner of articulation, place of articulation (Roach, 2000: 139)

2.4.1 Assimilation of place of articulation

According to Peter Roach;

Assimilation of place is most clearly observable in some cases where a final consonant with alveolar place of articulation is followed by an initial consonant with a place of articulation that is not alveolar. For example, the final consonant in 'that' ðaet is alveolar t. In rapid, casual speech the /t/ will become /p/ before a bilabial consonant, as in: 'that person' (ðaep pɛ:sn) , 'light blue' (laip blu:) and 'meat pie' (mi:p pai).

The most common phonemic changes at word boundaries concern changes of place of articulation, particularly involving de-alveolarization. A well-known case is that of English word-final alveolar consonants such as /t, d, n/: if a word ending in one of these consonants is followed by a word whose initial consonant begins with a bilabial, a velar or a dental, the word-final alveolar consonant is likely to change it is place of articulation to match that at the beginning of the second

word. Thus the word 'that' /ðat/ may be followed by 'boy' /bɔɪ/ and become /ðap/, or it may be followed by 'girl' and become /ðak/, namely:

That boy → /ðap bɔɪ/   that girl → /ðak gɜ:l/ (Cruttenden, 2001: 285)

Good pen → /gʊb pen/   good concert → /gʊg kɒnsət/ (Cruttenden, 2001: 285)

Ten players → /tem pleɪəz/   ten cups → /teŋ kʌps/ (Cruttenden, 2001: 285)

That thing → /ðat θɪŋ/   get those → /gɛt ðəʊz/ (Roach, 2000: 139)

Another change of place of articulation involves the change of alveolar fricatives /s, z/ into post-alveolar fricatives. Any sequence of two words where the first ends with /s, z/ and the second begins with /ʃ/ or /j/, that /s/ becomes /ʃ/, and /z/ becomes /ʒ/. Thus this shoe /ðɪs ʃu:/ becomes /ðɪʃ ʃu:/; those years /ðəʊz jɪəz/ becomes /ðəʊʒ jɪəz/. (Roach, 2000: 140)

2.4.2 Assimilation of manner of articulation

Assimilation of manner is much less noticeable, and is only found in the most rapid and casual speech; generally speaking, the tendency is again for regressive assimilation. Assimilation of manner is typical of the most rapid and casual speech, in which case one sound changes the manner of it is articulation to become similar in manner to a neighbouring sound. An example can be a rapid pronunciation of "Get some of that soup", where instead of the expected /gɛt sʌm əv ðat su:p/ an English speaker says /gɛs sʌm v ðas su:p/, with /s/ replacing /t/ in two words. It is thus possible to find cases where a final plosive becomes a fricative or nasal (e.g. 'good night' /gʊn naɪt/), but most unlikely that a final fricative or nasal would become a plosive (Roach, 2000: 140).

2.4.3 Assimilation of voicing

This may refer to assimilation involving the feature [+/- voice]. In a certain environment we can consequently observe the voicing or devoicing of a segment. If we examine the pronunciation of the voiced labiodental fricative in the sequence give books /gɪv bʊks/, and we compare it with the sequence give peace /gɪf pi:s/ we will easily notice that while in the first case /v/ is fully voiced, in the second it is rather pronounced as some kind of /f/. However, word boundary final voiceless consonants in English do not show tendencies to assimilate to their voiced counterparts; thus the pronunciation of nice boy /naɪz bɔɪ/ will sound foreign to English ears (Cruttenden, 2001: 284).

The process of assimilation of voicing is common in pronunciation of English weak forms. For instance, weak form of a preposition /of/ could be either /əv/ or /əf/. It is final form in a concrete realization depends on voicing and voicelessness of the following sound (Volín 2006, 67). Another example from Peter Roach is when the final voiced fricative /z/ in cheese phonemically transcribed as /ˈt ʃiːz/ becomes more like /s/ when it occurs in cheesecake pronounced as [ˈt ʃiːskeɪk]. Interestingly enough, "these devoiced consonants do not shorten preceding vowels as true consonants do" (Roach 2009, 112).

Based on the production of voicing of assimilation itself, we can distinguish between two main types. They are:

1. Voicing

This assimilation occurs when the voicing (the vibration of the vocal folds) of the assimilator is transferred to a voiceless assimilee. For example: The voiceless word-final consonant cluster /st/ in the word test is assimilated into voiced /zd/, when the word is followed by a voiced sound.

2. Devoicing (Assimilation of Voicelessness)

This assimilation occurs when the feature of voicelessness of the assimilator is transferred to a voiced assimilee. For example, the voiced consonant /b/ in word chlieb bread is assimilated into voiceless /p/ when the word is followed by a pause or a voiceless consonant.

Voice assimilation is not very common as a connected speech process and is restricted to some close-knit structures, such as have to and of course, in these cases assimilation is regressive and feature which is borrowed is voiceless-ness. Thus /v/ becomes /f/ because the following sound, /t/ or /k/, is voiceless. This sort of voicing assimilation only effect /v/ and /z/.

Examples:

Have to   /hæv tu/ > /hæf tu/

Of course   /əv kɔːs/ > /əf kɔːs/

Newspaper   /njuːzpepə/ > /njuːspeɪp/