Comprehending Assimilation Pattern by Tracing Its Phonological Process: Input, Environment, and Process

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ABSTRACT

Native speakers, English mother tongue, speak naturally. Although they do not think the way how they are pronouncing words, they seem to simplify their speeches. Therefore, it is often difficult to understand what is spoken by them because it is heard like babbling. One of the simplifications of speeches is assimilation.

Assimilation is one of phonological processes. Comprehending its phonological process means understanding its input, environment, and process. Therefore, all phenomena of pronunciation particularly assimilation are collected and then they are classified and described one by one based on its input, environment and process. The result of the research is that to anticipate the preceding word, the first is anticipating the preceding: a) when alveolar is preceded by bilabial, alveolar will anticipate the bilabial by changing alveolar into bilabial, b) when alveolar is preceded by velar, alveolar will anticipate the velar by changing alveolar into velar, c) when alveolar is preceded by palato alveolar, alveolar will anticipate by changing into palato alveolar.

Key words: assimilation, phonological process, pronunciation,

A. Introduction

One of difficulties faced by the English students in understanding what is spoken by the native of English speaking countries is that the words they are saying seem unclear. In fact, it is not unclear as the English students think because the uncleanness is caused by the lack of the English students to understand one of ways of the native of English speaking countries speak. Most of the native of English speaking countries want to simplify the articulation process. Quoting McMahon (2002:101), he states that all languages modifying complicated sequence in
connected speech in order to simplifying the articulation process, but the manner how in which this is done varies from one language to another.

From what is stated by McMahon above, it seems that modification of complicated sentence in connected speech is for the ease of pronunciation. Therefore, it would be understandable if the native speakers of English spoke their language naturally. They do not think what they are pronouncing is a process of simplification because it is the way in which they pronounce it. It is often very difficult to understand a native speaker’s speech. When we listen to them, it seems what they are saying is like babbling. Even if we could hear, what is in our mental process is different from what is spoken. For example, *I can go* is heard /ai kæŋ gëu/, *I can be there* is heard /ai kæm bi ðe(r)/. It will be interesting to find out why the target (assimilated form/phonetic form) /ai kæŋ gëu/ and /ai kæm bi ðe(r)/ are not heard as the source (ideal form/phonemic form) /ai kæŋ gëu/ and /ai kæm bi ðe(r)/.

In Phonological point of view, a word has a basic underlying phonemic form, which we store in mental process and this phonemic form may be changed by phonological process to become the phonetic form (the real sound occurred/heard). Let consider the following example:

<table>
<thead>
<tr>
<th>Phonemic Input</th>
<th>Can be</th>
<th># kæn bi #</th>
</tr>
</thead>
<tbody>
<tr>
<td>(UR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process:</td>
<td></td>
<td># kæn bi #</td>
</tr>
<tr>
<td>/n/ is assimilated to the bilabial place of articulation of the following /b/, anticipating the following bilabial consonant /b/ thus becomes /m/</td>
<td># kæm bi #</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phonetic Output</th>
<th># kæm bi #</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Phonetic Form)</td>
<td></td>
</tr>
</tbody>
</table>
It is the phonological process involved in the change of the ideal (phonemic form) into the target (phonetic form). Malkjaer (1991:27) states that speech sound, when occurring in connected speech i.e. in a flow of speech, partially blend into each other. The connection of it acquires the process of the so-called combinatory phonetics. In addition, there are many kinds of combinatory articulatory phenomena.

One phenomenon that could involve answering this is what the so-called assimilation process is. Assimilation is an everyday occurrence in every human language and it is particularly common for nasal sounds (McMahon, 2002:4). However, I believe that there is other assimilations people make in daily conversation. Therefore, this paper is intended to describe assimilation from points of view of its input, environment, and process. The description is merely theoretical, not practical.

B. Discussion

Discussion on the phonological process of assimilation in the viewpoint of its input, environment, and process would be classified into 1) Leading/Anticipation/Regressive, 2) Lagging/Perseverative/Progressive, and 3) Voicing/Energy/Laryngeal.

B.1 Leading/Anticipation/Regressive

The idea of leading/anticipatory/regressive is that the second sound in the sequence is the caused of assimilation happened. There are five patterns of assimilations of this classification found and they will be described one by one, as follows.

B.1.1 Alveolar-Bilabial Assimilation.

Collin and Mees (2003) describe alveolar and bilabial as follows. Alveolar is a place of articulation involving the tip/blade of the tongue and the alveolar ridge, e.g. English /t n s/, while bilabial is a place of articulation involving both lips, e.g. /p b m/.

Alveolar would become bilabial in context preceding bilabial. Therefore, /t/→/p/, /d/→/b/, and /n/→/m/ in the case of preceding /p b m/ and less commonly /w/. The phonological process runs as follows.
From the phonological process above, the input # split pê:sênælêti # is the phonemic form or simply how the words are pronounced and it is called ideal form, the environment is what letter precedes what letter or what letter of place or articulation is in to influence what letter of place articulation should come, and the process is a way how the letter of place of articulation being changed under influence of its environment.

Other examples can be described as follows.

a. /t/ → /p/ before /p/, for examples: basket maker and set point
   - Basket maker /ba:skit meikê:/ becomes /ba:skip meikê:/

   ![Diagram](#)

   # ba:skit → ba:kip meik?:#

   alveolar bilabial

   ![Diagram](#)

   # set → sep po:int:#

   alveolar bilabial
b. /t/ \rightarrow /p/ before /b/, for examples: front bench and set back

- front bench /frAnt bent/ \rightarrow /frAnp bent/ [bilabial]

- set back /set bæk/ \rightarrow /sep bæk/ [bilabial]

---

c. /t/ \rightarrow /p/ before /m/, for examples: hit man and hot metal

- hit man /hit mæn/ \rightarrow /hip mæn/ [bilabial]

- hot metal /hot metl/ \rightarrow /hop metl/ [bilabial]
d. /d/ \(\rightarrow\) /b/ before /p/, for examples: bad pain, blood bank, and mud pie

- bad pain /bæd pein/ becomes /bæb pein/
  
  # bæ d \(\rightarrow\) bæb pein #

- blood bank /blʌd bæŋk/ becomes /blʌb bæŋk/
  
  # blʌd \(\rightarrow\) blʌb bæŋk #

- mud pie /mʌd pai/ becomes /mʌb pai/
  
  # mʌd \(\rightarrow\) mʌb pai #

e. /d/ \(\rightarrow\) /b/ before /b/, for example: old boy

- old boy /əuld bo:i/ becomes /əuld bo:i/
  
  # əuld \(\rightarrow\) əuld bo:i #
f. /d/ → /b/ before /m/, for examples: old man and grand master

- old man /euld mæn/ becomes /eulk mæn/
  
  # euld → eulk mæn#

- grand master /grænd ma:st/? becomes /grænb ma:st/?
  
  # grænd → grænb ma:st? #

g. /n/ → /m/ before /p/, for examples: American plan and pen pal

- American plan /emerikən plæn/ becomes /emerikəm plæn/
  
  # ëmerikən → ëmerikəm plæn #

- pen pal /pen pol/ becomes /pem pol/
  
  # pen → pem pol #
h. \( /n/ \rightarrow /m/ \) before \(/b\ p/\), for examples: green belt and garden party

- **green belt** \( /\text{gri:n belt}/ \) becomes \( /\text{gri:m belt}/\)

  \[
  \# \text{gri:n} \rightarrow \text{gri:m belt} \#
  \]

  \[
  \text{bilabial} \\
  \text{alveolar} \\
  \]

- **garden party** \( /\text{ga:dn pa:ti}/ \) becomes \( /\text{ga:dm pa:ti}/\)

  \[
  \# \text{ga:dn} \rightarrow \text{ga:dn pa:ti} \#
  \]

  \[
  \text{bilabial} \\
  \text{alveolar} \\
  \]

i. \( /n/ \rightarrow /m/ \) before \(/m/\), for examples: sun blind and pin money

- **sun blind** \( /\text{s\text{\-}en blaind}/ \) becomes \( /\text{s\text{\-}em blaind}/\)

  \[
  \# \text{s\text{\-}en} \rightarrow \text{s\text{\-}em blaind} \#
  \]

  \[
  \text{bilabial} \\
  \text{alveolar} \\
  \]

- **pin money** \( /\text{pin m\text{\-}eni}/ \) becomes \( /\text{pim m\text{\-}eni}/\)

  \[
  \# \text{pin} \rightarrow \text{pim m\text{\-}eni} \#
  \]

  \[
  \text{bilabial} \\
  \text{alveolar} \\
  \]
B.1.2 Alveolar-Velar Assimilation

Collin and Mees (2003) describe velar as a place of articulation involving the velum and the back of the tongue, e.g. /k g н/. Alveolar would become velar in context of preceding velar. Therefore, /t/ will change into /k/, /d/ into /g/ and /n/ into /n/ before /k/ or /g/.

The process of change runs as follow.

a. /t/ → /k/ before /k/, for examples: cigarette card and credit card

- cigarette card /sigâret ka:d/ becomes /sigârek ka:d/

```
  # sigâret → sigârek ka:d
  \   /  \\
   \ /  \\
   alveolar velar
```

- credit card /kredit ka:d/ becomes /kredik ka:d/

```
  # kredit → kredik ka:d
  \   /  \\
   \ /  \\
   alveolar velar
```

b. /t/ → /k/ before /g/, for examples: fat girl and first class

- fat girl /fæt gə:l/ becomes /fæk gə:l/

```
  # fæt → fæk gə:l
  \   /  \\
   \ /  \\
   alveolar velar
```
- first class /fɛːst klaːs/ becomes /fɛːsk klaːs/

  # fɛːst → fɛːsk klaːs #

  alveolar velar

  velar

c. /d/ → /g/ before /k/, for examples: hard core and cold cream

- hard core /haːd koː/ becomes /haːɡ koː/

  # haːd → haːɡ koː #

  alveolar velar

- cold cream /kɛul̠d kriːm/ becomes /kɛulg kriːm/

  # kɛul̠d → kɛulg kriːm #

  alveolar velar

  velar

d. /d/ → /ŋ/ before /g/, for examples: bad girl and slide guitar

- bad girl /bæd ɡeːl/ becomes /bæɡ ɡeːl/

  # bæd → bæɡ ɡeːl #

  alveolar velar

  velar
- slide guitar /slaɪd ɡɪːtə/ becomes /slaɪg ɡɪːtə/

  # slaɪd → slaɪg ɡɪːtə#

  alveolar velar

- /n/ → /ŋ/ before /k/, for examples: human capital and tin can

  - human capital /hjuːmən ˈkeɪpɪtəl/ becomes /hjuːmən ˈkeɪpiːtl/

    # hjuːmən → Hjuːmən ˈkeɪpiːtl#

    alveolar velar

  - tin can /tin ˈkeɪn/ becomes /tiŋ ˈkeɪn/

    # tin → tiŋ ˈkeɪn#

    alveolar velar

- /n/ → /ŋ/ before /ɡ/, for examples: golden gate and common good

  - golden gate /gəʊldn ɡeɪt/ becomes /ɡəʊldni ɡeɪt/

    # fəːst → fəːsk klaːs#

    alveolar velar
common good /kAmén gu:d/ becomes /kAmēŋ gu:d/

# kAmēn  →  kAmēŋ gu:d #

alveolar  velar

B.1.3 Alveolar-Palato Alveolar Assimilation

Palato alveolar is a place of articulation involving the blade/front of the tongue and the rear of the alveolar ridge/front of the hard palate, e.g. /ʃ/ as in shiver and /ʒ/ in jeans (Collin and Mees, 2003).

Alveolar would become velar in context preceding palato alveolar. Therefore, alveolar /s/ change to palato alveolar /ʃ/, alveolar /z/ changes to palato alveolar /ʃ/ before palato alveolar /ʃ/; for example, nice shoes and dress shop.

- nice shoes /naːis ʃuːs/ becomes /naːʃ ʃuːs/

# naːis  →  naːʃ ʃuːs #

alveolar  palato alveolar

- dress shop /dreːʃ ʒuːp/ becomes /dreːʃ ʒuːp/

# dreːʃ  →  dreːʃ ʒuːp #

alveolar  palato alveolar
B.1.4 Reciprocal Assimilation

In many cases, here is a two-way exchange of articulation features. The plosive is a manner of articulation which involves a complete closure in the vocal tract (the passageways above the larynx used in speech) followed by a rapid release of the airstream, e.g. /p b/ in pie, buy (Collin and Mees, 2003). The plosives /t d/ merge regularly with you and your in a process of reciprocal assimilation of place and manner. The fricatives /s z/ has similar reciprocal assimilation with any word-initial /j/. There are four patterns can be encountered in this kind of assimilation.

a. /t/ + /j/ become /tʃ/, for example: suit your self #sut: jo: self#

b. /d/ + /j/ become /dʒ/, for example: find your umbrella #faind jo: Ambrel ê#

c. /s/ + /j/ become /ʃʃ/, for example: nice yellow shirt #na:is jelo:ʃ ʃ#

d. /z/ + /j/ become /ʒʃ/, for example: where’s your cupé #we:z jo: kʌp?#
In question-tag with *you* this pattern is common, for example:

a. You didn’t cheat, did you? /did ju:/ → /did eju/

b. You shouldn’t be honest, shouldn’t you? /judnt ju:/ → /judnt ju/

In phrase, *do you*, assimilation is frequently occurring, especially in informal form *d’you*. For example: D’you write it yourself? D’you is pronounced /dsu/.

**B.1.5 Nasals Assimilation**

Nasal is a manner of articulation involving the soft palate being lowered so that the airstream escapes via the nasal cavity (the space inside the nose), e.g. /m n /.

There are three patterns encountered in nasal assimilation.

a. Labial nasal /m/ appears only before velar consonant, for example:

  Imbalance /imbalens/ → /imbælens/

  Impossible /impesbl/ → /impesbl/

b. Velar nasal /n/ appears only before velar consonant, for example:

  Incoherent /inkohierent/ → /inkohierent/

  Inconsistent /inkonsistent/ → /inkonsistent/

c. Coronal nasal /n/ appears before coronal nasal and vowel, for example:

  Intolerable /intelerebl/ → /intelerebl/

  inelegant /ineligent/ → /ineligent/

**B.2 Lagging/Perseverative/Progressive**

The first segment will cause the assimilation happened. Initial /ð/ in unstressed words may be assimilated following /n l s z/. This kind of assimilation is most frequent preceding *the*. The followings are the examples.
a. on the selves # o:n ðêselvz#

\[
\text{alveolar}
\]

\[
\text{o:n ðê} \rightarrow \text{o:n nê selvz}
\]

\[
\text{dental} \quad \text{alveolar}
\]

/ð/ is changed into alveolar /n/ to preserve /n/ in the first sequence.

b. all the time # o:l ðê taim#

\[
\text{alveolar}
\]

\[
\text{o:l ðê} \rightarrow \text{o:l lê taim}
\]

\[
\text{dental} \quad \text{alveolar}
\]

/ð/ is changed into alveolar /l/ to preserve /l/ in the first sequence.

c. what's the matterê # wo:ts ðê mætê#

\[
\text{alveolar}
\]

\[
\text{wo:ts ðê} \rightarrow \text{wo:ts sê mætê}
\]

\[
\text{dental} \quad \text{alveolar}
\]

/ð/ is changed into alveolar /s/ to preserve /s/ in the first sequence.
d. How's the patient? #hauz.øê pei ʃ n#

    alveolar

    hauz øê \rightarrow hauz æ pei ʃ n

    dental alveolar

/ø/ is changed into alveolar /z/ to preserve /z/ in the first sequence.

With word other than the, assimilation of this type is less frequent particularly in unstressed contexts, for example, in this context # in ðis ko:ntekst#.

    alveolar

    in ðis \rightarrow in nis ko:ntekst

    dental alveolar

/ð/ is changed into alveolar /n/ to preserve /n/ in the first sequence.

B.3 Voicing/Energy/Laryngeal.

It can be seen where voiced consonants becomes voiceless, or voiceless consonants become voiced, under the influence of neighboring segment, stressed and unstressed syllable. In English, energy assimilation is rare in stressed syllable. It can be seen when voiced consonant become voiceless, or voiceless consonant become voiced, under the influenced of neighboring segment. It occurs in the English used to and have to/has to (where equivalent to must).

For examples:

I used to an English teacher /a:i ju:stê ên iŋglish ti:tʃe/, compare with I used two (main verb) /a:i ju:zd tu:/ and I have to send my frined e-mail /a:i hæftê send mai frend imel/ compare with I have two (main verb possess) /a:I hæv tu:/.
Besides it, there is also some word-internal energy assimilation. It has generally free variation between two possible forms, for examples:

Newspaper /nju:speipə/ or /nju:zpeipə/
Absurd /ɛbzd/ or /ɛbzːd/
Absolute /æbsəluːt/ or /æbsəluːt/

Energy assimilations occur in unstressed contexts but only in the form lenis to Fortis. This is particularly true of final in flexional /z/ (derived from the s of plurals, possessives, and verb forms), and also with function words such as as and of and auxiliary verbs, for examples:

Of course /ɛv koːz/ → /ɛf koːs/
It was stated /it wez steitid/ → /it wes steitid/
As soon as possible /ɛs suːn ɛz poːsəbl/ → /ɛs suːn ɛs posəbl/

C. Conclusion

Obviously, assimilation is a very complex phonological process. By knowing the patterns of assimilation occurred in its phonological process, the students of English will be more aware of why the source (ideal form) and the target (assimilated form) are different one another. Besides, they will also recognize that human speech is tremendously varies and its way of pronouncing them also varies. Therefore, comprehending the pattern and the phonological process of assimilation will make them easier to enhance their sounds production and receptive skills.

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