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Nasal Homorganic Assimilation Phenomenon in YTD: An Autosegmental Analysis

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Abstract

This paper investigates Nasal Homorganic Assimilation (NHA) phenomenon in Yemeni Tihami dialect (YTD). The paper presents an autosegmental analysis of NHA determining how the phonological process takes place.

The study is conducted theoretically and supported by practical evidence from the Yemeni Tihami context. The data were analysed and examined within the framework of the Autosegmental Phonology Theory. Methodologically, the data were elicited by employing different methods, viz., Swadesh list, the two tasks of Labovian models - word list reading and passage reading, interviews, oral phonology questionnaires, recordings and participant observations.

The findings of the autosegmental analysis are in line with the claim of Clements (1985) that assimilation of the place of articulation commonly affects nasals and laryngeal features.

1. Introduction

Nasal Homorganic Assimilation (NHA)

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Assimilation is a phonological process where a phone becomes similar to a nearby phone. This is probably the most common phonological process in all languages. **Figures 1, 2, 3, 4 and 5** below demonstrate five environments of the phonological processes of the nasal homorganic assimilation (henceforth, NHA) in YTD.

Based on the framework of Feature Geometry model by Clements (1985), the delinking line goes from the place of articulation node (PL) on the right side backwards to the supralaryngeal (SL) node on the left side and simultaneously spreads its distinctive features. Likewise, nasal homorganic assimilation in the YTD operates from the place of articulation node (PL) on the right side leftwards to the supralaryngeal (SL) node on the left side and simultaneously spreads its distinctive features. This phonological process occurs at the prefix boundary (proclitic boundary), as in /ʔaŋka:s/ ‘the cup’ and /ʔaŋqalam/ ‘the pen’, and also within the domain of root-internal, as in /mambar/ ‘bed’, /qʊrʊmbʊʃ/ ‘old thing’ and /ntqaraʔ/ ‘we breakfast’ but it does not hold at the suffix boundary.

To generalise, the [+voiced] labial /m/ and [+voiced] coronal /n/ undergo the process of assimilation when they combine with underlying root-internal phonemes namely the obstruents /b/, /g/, /k/, /q/ and /t/. In other words, when the [+voiced] labial /m/ in the prefix boundary followed by a root of initial obstruents /g/, /k/ and /q/ the partial nasal homorganic assimilation occurs in YTD as clearly seen in the examples presented below in **a, b, and c** consecutively. The PL node on the right side (root initial of /g/, /k/ and /q/) spreads its features to the SL node on the left side of the nasal consonants ([+voiced] labial and coronal). The following words in **a, b, c, d, and e** have been recorded carefully to give evidence to explain the phonological process of NHA that occurs in YTD.

(a) Proclitic + Root (noun with initial /g/)

| Underlying Form | Output | Meaning |
|---------------------|-------------|---|
| /ʔam+gadr/ امجر | [ʔaŋgadr] | انجر the wall |
| /ʔam+ga:hɪl/ امجاهل | [ʔaŋga:hɪl] | انجاهل the child |
| /ʔam+gʊhs'/ امجحص | [ʔaŋgʊhs'] | انجحص the scratch |
| /ʔam+garah/ امجره | [ʔaŋgarah] | انجره the jar (made of pottery) |
| /ʔam+gʊdʊd/ امجدد | [ʔaŋgʊdʊd] | امجدد small insect (type of grasshopper) |
| /ʔam+gʊrhʊd/ امجرحد | [ʔaŋgʊrhʊd] | انجرحد A type of disease (similar to cough) |

(b) Proclitic + Root (noun with initial /k/)

| | | | | |
|--------------|---------|-------------|---------|--------------|
| /ʔam+ka:s/ | امكاس | [ʔaŋka:s] | انكاس | The cup |
| /ʔam+kɪʔa:b/ | امكتاب | [ʔaŋkɪʔa:b] | انكتاب | The book |
| /ʔam+ki:s/ | امكيس | [ʔaŋki:s] | انكيس | The basket |
| /ʔam+kalb/ | امكلب | [ʔaŋkalb] | انكلب | The dog |
| /ʔam+ku:rah/ | امكورة | [ʔaŋku:rah] | انكورة | The ball |
| /ʔam+kɪsa:n/ | امكيسان | [ʔaŋkɪsa:n] | انكيسان | The cups |
| /ʔam+kasab/ | امكسب | [ʔaŋkasab] | انكسب | livestock |
| /ʔam+kamar/ | امكمر | [ʔaŋkamar] | انكمر | type of belt |

(c) Proclitic + Root (noun with initial /q/)

| | | | | |
|----------------|---------|---------------|---------|--------------------------------|
| /ʔam+qalb/ | امقلب | [ʔaŋqalb] | انقلب | The heart |
| /ʔam+qalam/ | امقلم | [ʔaŋqalam] | انقلم | The pen |
| /ʔam+qa:t/ | امقات | [ʔaŋqa:t] | انقات | green grass |
| /ʔam+qaju:m/ | امقيوم | [ʔaŋqaju:m] | انقيوم | A person in charge of a mosque |
| /ʔam+qʊfl/ | امقفل | [ʔaŋqʊfl] | انقفل | The lock |
| /ʔam+qa:ʔ/ | امقاع | [ʔaŋqa:ʔ] | انقاع | The floor |
| /ʔam+qaʔmu:s'/ | امقأموص | [ʔaŋqaʔmu:s'] | انقأموص | A small black ant |
| /ʔam+qazh/ | امقزح | [ʔaŋqazh] | انقزح | cats' urine |

(d) Root-internally

| | | | | |
|-----------|--------|-----------|--------|-----------------|
| /janbʊh/ | ينبح | [jambʊh] | يمبح | bark |
| /dʒanb/ | جنب | [gamb] | جمب | next to/ beside |
| /manbar/ | منبر | [mambar] | ممبر | bed |
| /ʔanbɪəʔ/ | أنبياء | [ʔambɪəʔ] | أمبياء | prophets |

| | | | | |
|-------------|--------|-------------|--------|---|
| /ðanb/ | ذنب | [ðamb] | ذمب | sin/ guilt |
| /ʕanb/ | عنب | [ʔamb] | عمب | papaya |
| /manbaʕ/ | منبع | [mambaʔ] | ممبع | source |
| /janbaʃ/ | ينبش | [jambaʃ] | يمبش | bite |
| /qanbar/ | قنبر | [qambar] | قمبر | sit |
| /s'anbu:q/ | صنبوق | [s'ambu:q] | صمبوق | boat |
| /janbʊz/ | ينبز | [jambʊz] | يمبز | came out |
| /qʊrʊnbʊʔ/ | قرنبيع | [qʊrʊmbʊʔ] | قربماً | old thing |
| /zanbaʔ/ | زنبط | [zambaʔ] | زمبظ | showing off |
| /dʌnbas'/ | دنبص | [dʌmbas'] | دمبص | falls down in mud |
| /hanbaʃ/ | حنبش | [hambaʃ] | حمبش | Name of a family |
| /janbʊq/ | ينبق | [jambʊq] | يمبق | exaggerate in speech |
| /qanbaʕ/ | قنبيع | [qambaʔ] | قمبيع | He sells unvaluable things |
| /janbɪ/ | ينبي | [jambɪ] | يمبي | He corrects him (in speech) |
| /jaʔ'anbaʃ/ | يطنبش | [jaʔ'ambaʃ] | يطمبش | He spreads water on his body |
| /xanbaq/ | خنبق | [xambaq] | خمبق | He spoiled water by putting his hand in |

(e) Proclitic + Root (plural verbs)

| | | | | |
|---------------|--------|------------|--------|----------------|
| /naʔaɖʒa:ɖal/ | نتجادل | [nʔga:ɖal] | نتجادل | we argue |
| /naʔaɖaraʕ/ | نتقرع | [nʔqaraʔ] | نتقرع | we breakfast |
| /naʔazawaɖ/ | نتزود | [nʔzawaɖ] | نتزود | we supply |
| /naʔazawaɖʒ/ | نتزوج | [nʔzawag] | نتزوج | we marry |
| /naʔaħa:rab/ | نتحارب | [nʔħa:rab] | نتحارب | we fight |
| /naʔaʕa:rak/ | نتعارك | [nʔʔa:rak] | نتعارك | we quarrel |
| /naʔaxaraɖʒ/ | نتخرج | [nʔxarag] | نتخرج | we graduate |
| /naʔaʕaɖɖ/ | نتغدى | [nʔʕaɖɖ] | نتغدى | we eat (lunch) |

As seen in (e), another generalisation can be drawn that NHA occurs after the process of vowel deletion in the first syllable. The diagram below, based on the Feature Geometry model by Clements (1985), shows the rule of NHA in which the features of the obstruents spread the distinctive features from the place of articulation node (PL) on the right side backwards to the supralaryngeal (SL) node on the left side (e.g., nasal consonants).

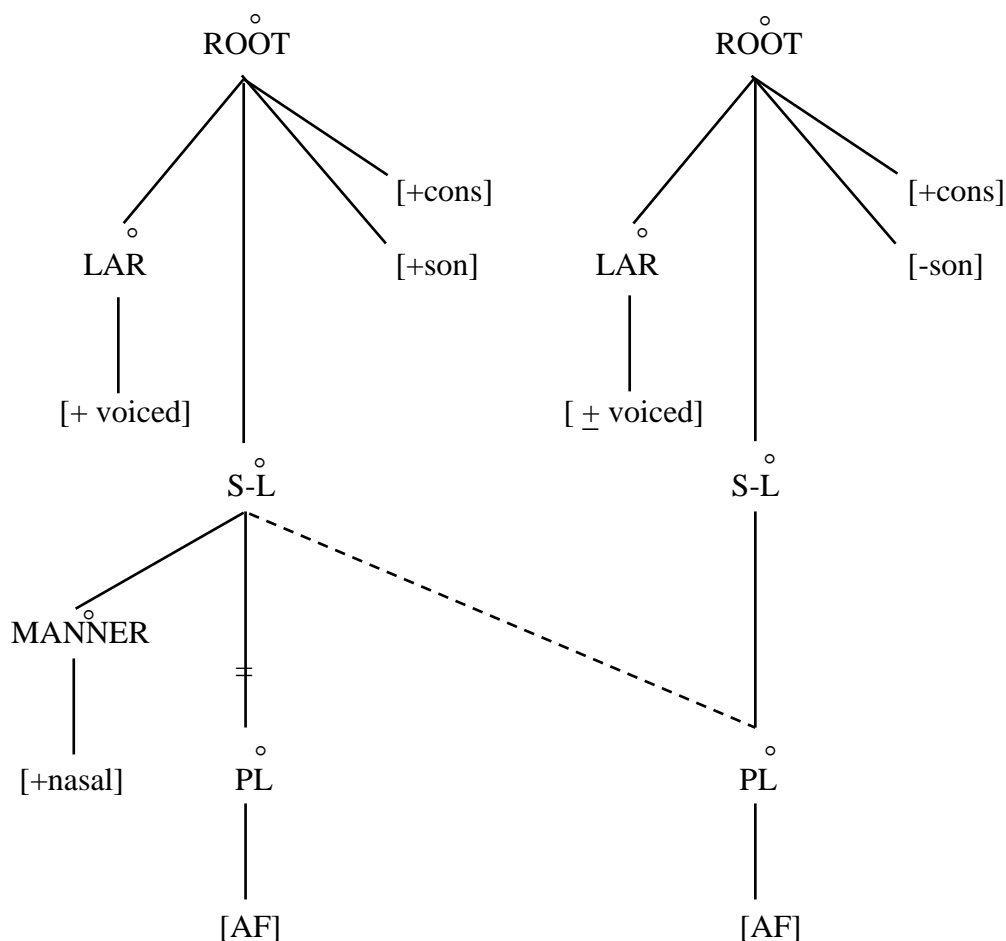


Figure 1: The Rule of NHA in YTD

Based on the generalisations and the illustrative diagram of the phonological process of NHA in YTD, the situations of this process are as follows:

- (a) /mg/ → [ŋg]
- (b) /mk/ → [ŋk]
- (c) /mq/ → [ŋq]
- (d) /nb/ → [mb]

(e) /nt/ → [nt]

Figure 2 below illustrates the process of delinking the labial /m/ from its distinctive features. As the diagram shows, the assimilation process, based on the Feature Geometry model by Clements (1985), consists in spreading the dorsal (DOR) feature linked to the velar /g/ leftwards to the nasal labial /m/, and simultaneously delinking the labial feature of the nasal /m/ from its own place feature as seen in **(a.i)**. Therefore, the nasal labial /m/ comes to be articulated as the nasal dorsal /ŋ/ which has the same place of articulation as the dorsal /g/ as demonstrated in **Figure 3**.

(a.i) Underlying Form: /mg/

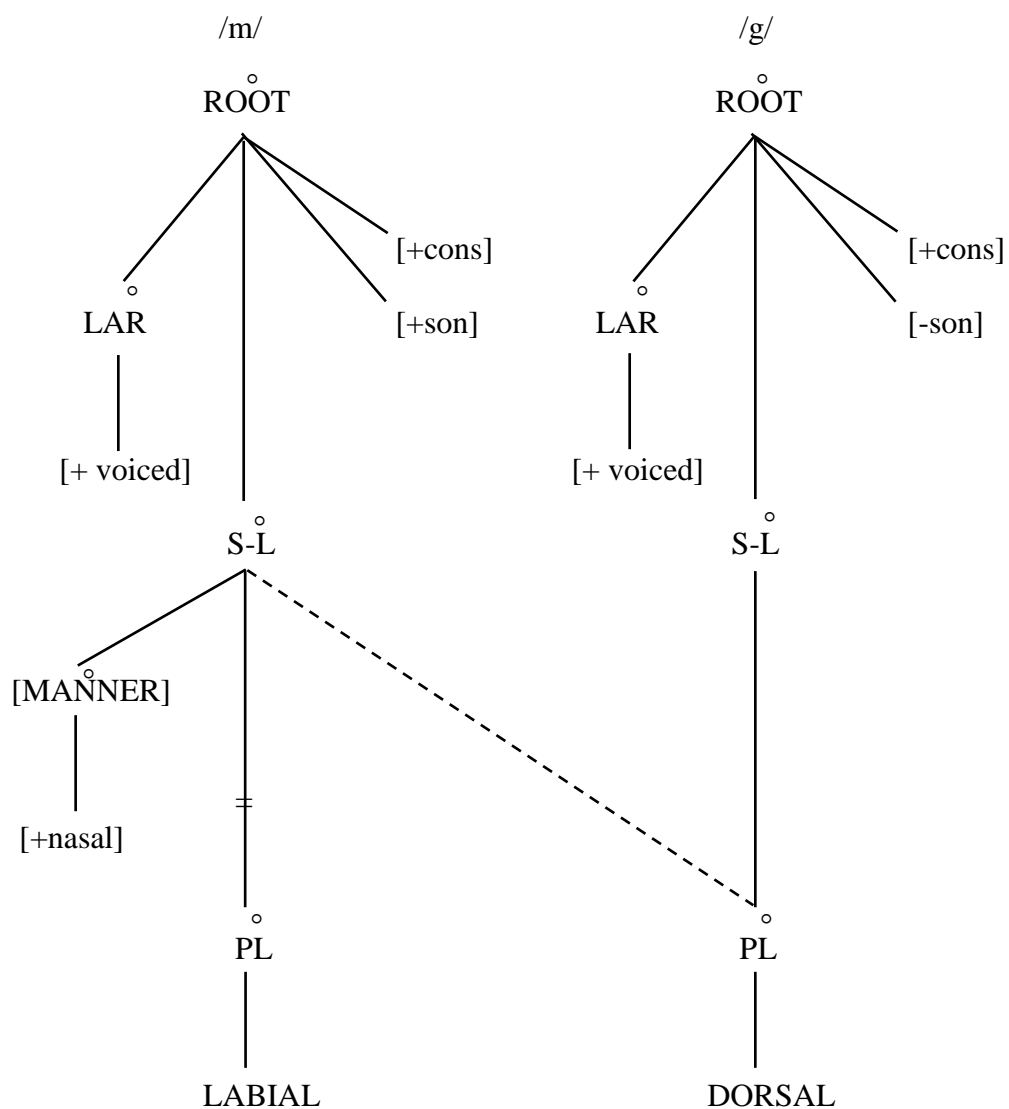


Figure 2: The Process of Delinking the Labial Feature /m/

(a.ii) Output: [ŋg]

Figure 3 below shows that the nasal labial /m/ acquired the distinctive features of the dorsal /g/ after the process of spreading to be articulated as the nasal dorsal /ŋ/.

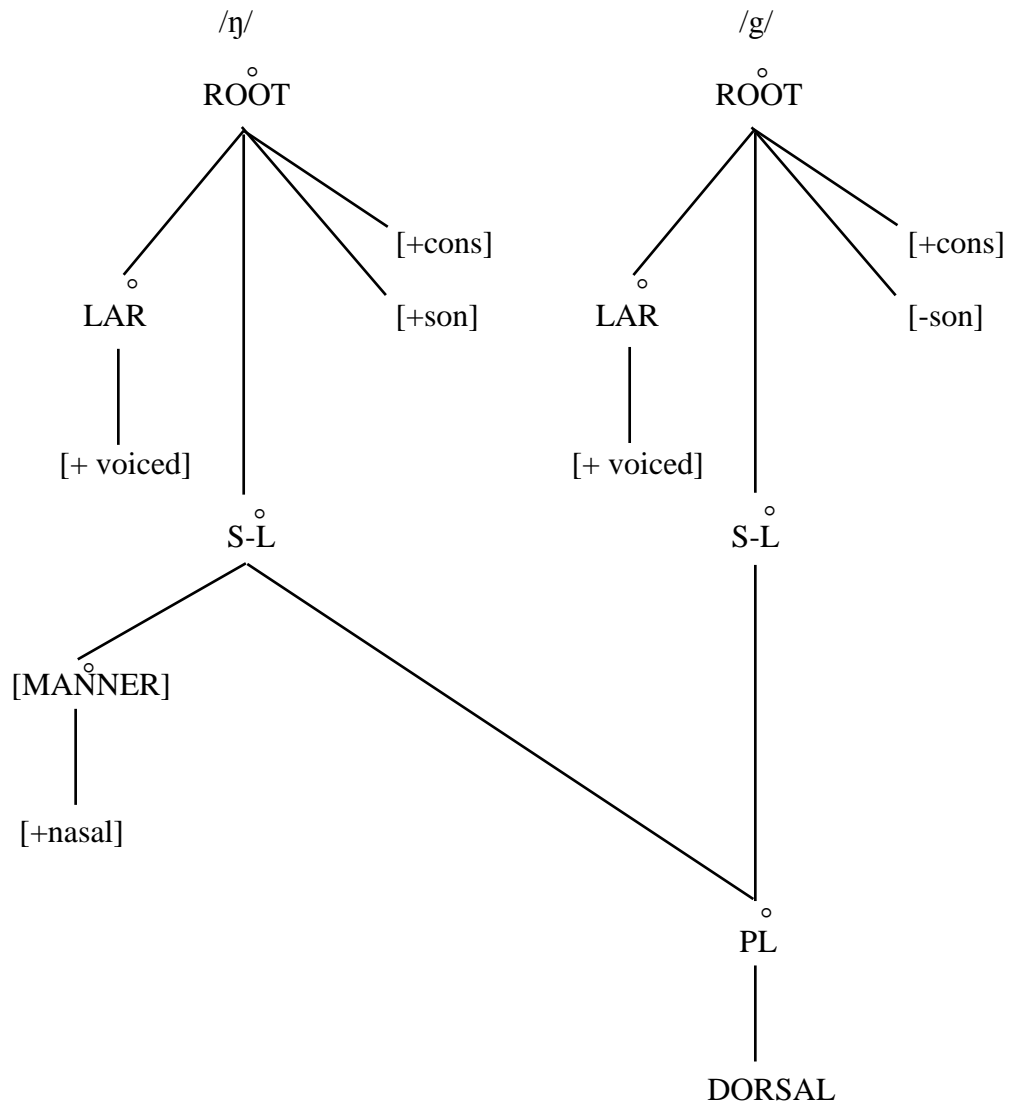


Figure 3 The Output Process of NHA in /mg/

Figure 4 below illustrates the process of delinking the nasal labial /m/ from its distinctive features. As the diagram shows, the assimilation process, based on the Feature Geometry model by Clements (1985), consists in spreading the dorsal (DOR) feature linked to the dorsal /k/ leftwards to the nasal labial /m/, and simultaneously

delinking the labial feature of the nasal /m/ from its own place of articulation as seen in (b.i). Therefore, the nasal labial /m/ comes to be articulated as the nasal dorsal /ŋ/ which has the same place of articulation as the dorsal /k/ as demonstrated in **Figure 4**.

(b.i) Underlying Form: /mk/

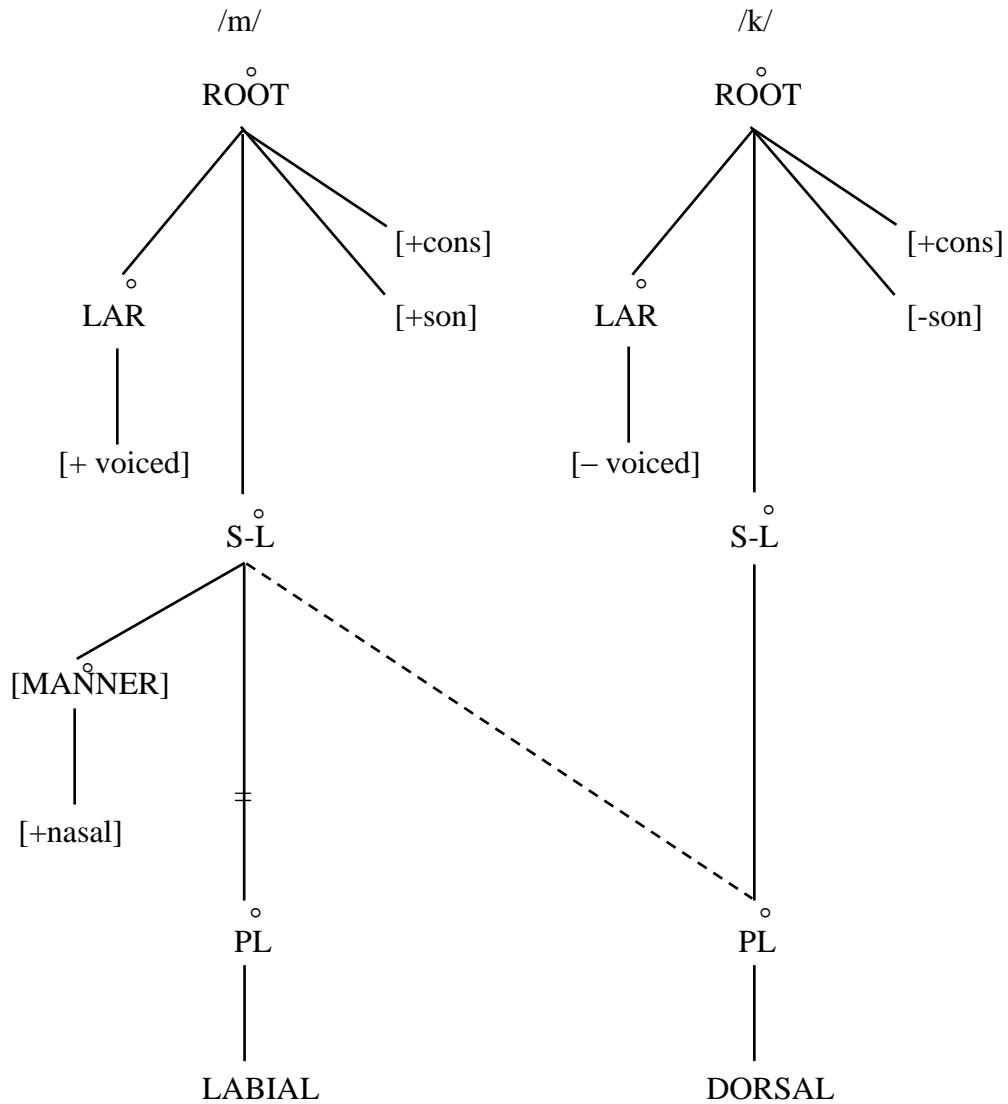


Figure 4 The Process of Delinking the Labial Feature /m/

(b.ii) Output: [ŋk]

Figure 5 below shows that the nasal labial /m/ acquired the distinctive features of the dorsal /k/ after the process of spreading to be articulated as the nasal dorsal /ŋ/

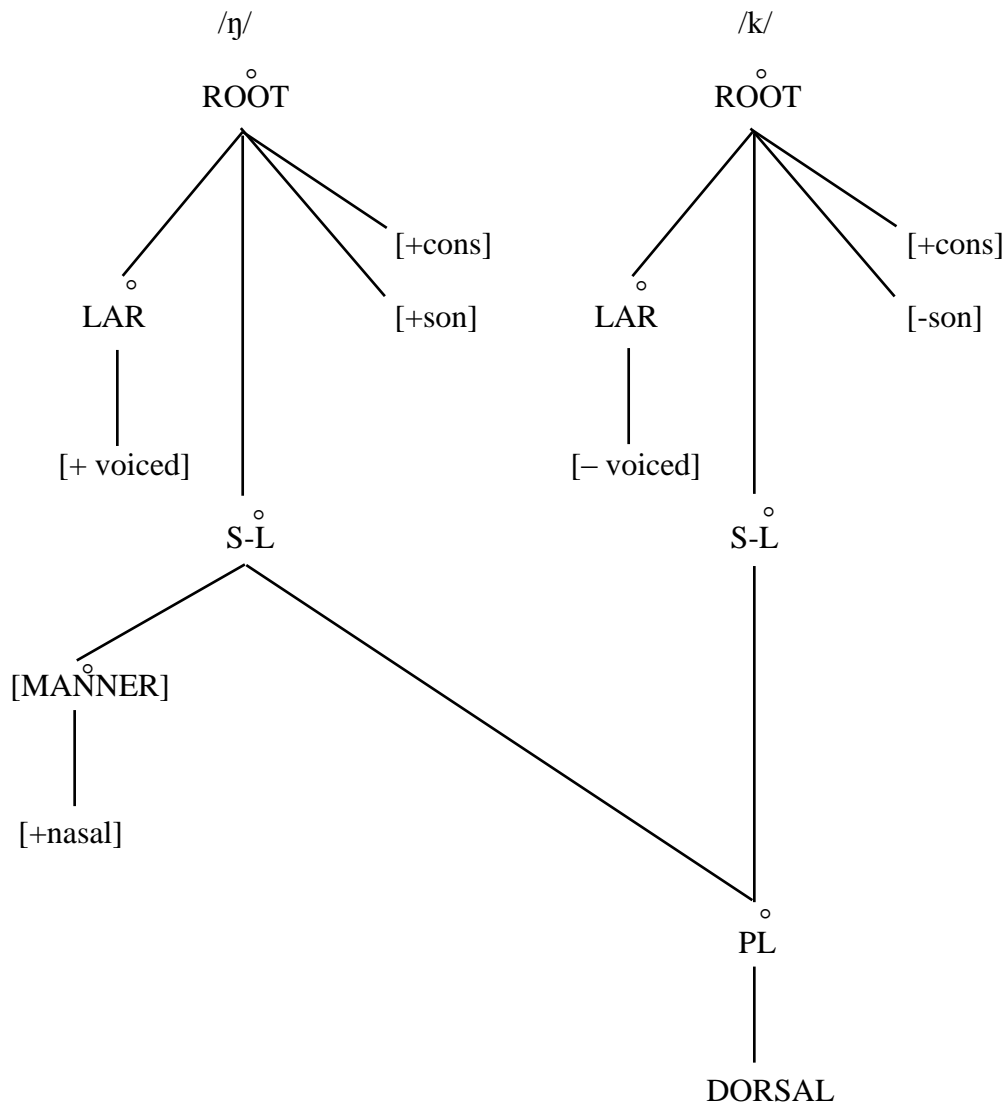


Figure 5 The Output Process of NHA in /mk/

Figure 6 below illustrates the process of delinking of the labial feature of the nasal labial /m/ from its distinctive features. As the diagram shows, the assimilation process, based on the Feature Geometry model by Clements (1985), consists in spreading the dorsal (DOR) feature linked to the dorsal /q/ leftwards to the nasal labial /m/, and simultaneously delinking the labial /m/ from its own place of articulation as seen in **(c.i)**. Therefore, the nasal labial /m/ comes to be articulated as the nasal dorsal

/ŋ/ which has the same place of articulation as the dorsal /q/ as demonstrated in **Figure 6**.

(c.i) Underlying Form: /mq/

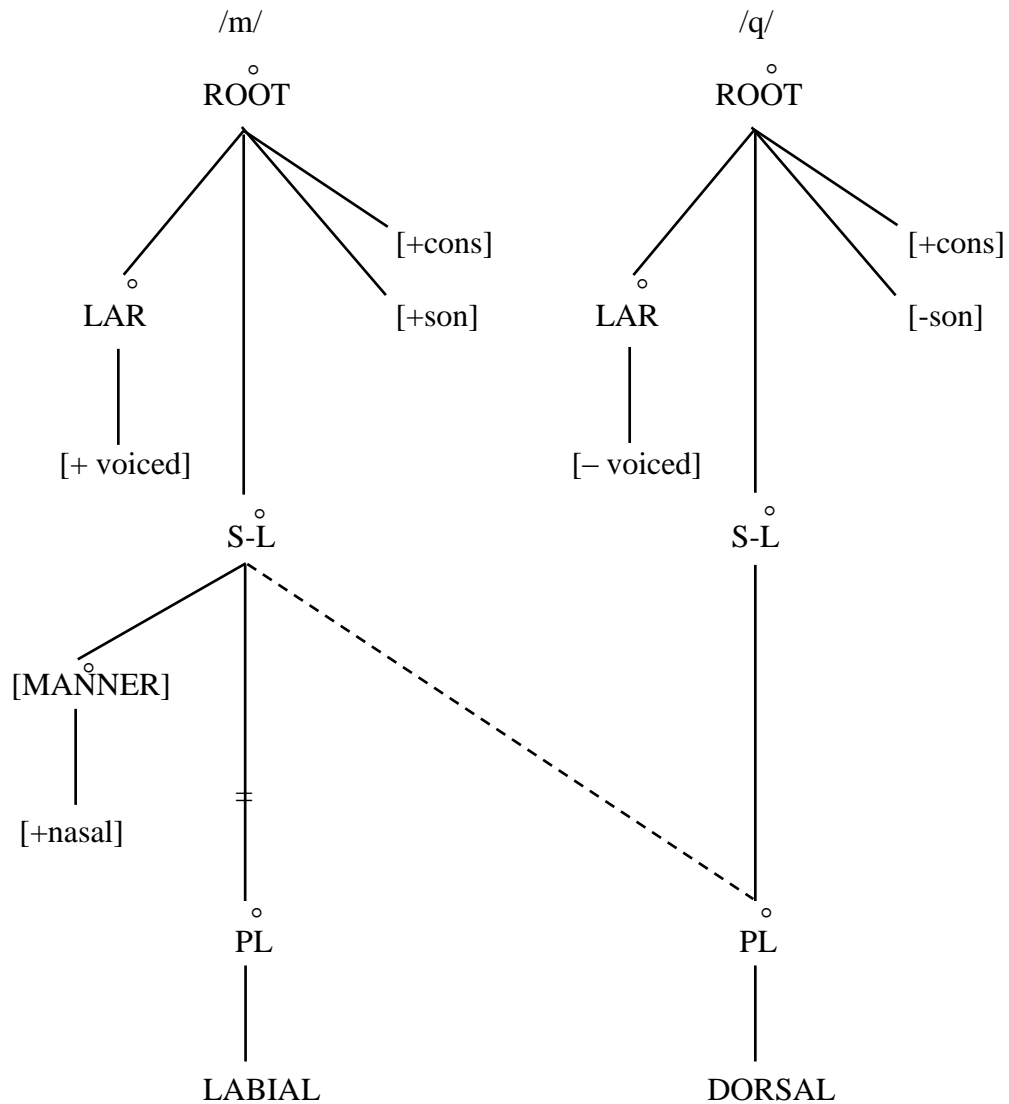


Figure 6: The Process of Delinking of the Labial Feature /m/

(c.ii) Output: [ŋq]

Figure 7 below shows that the nasal labial /m/ acquired the distinctive features of the dorsal /q/ after the process of spreading to be articulated as the nasal dorsal /ŋ/.

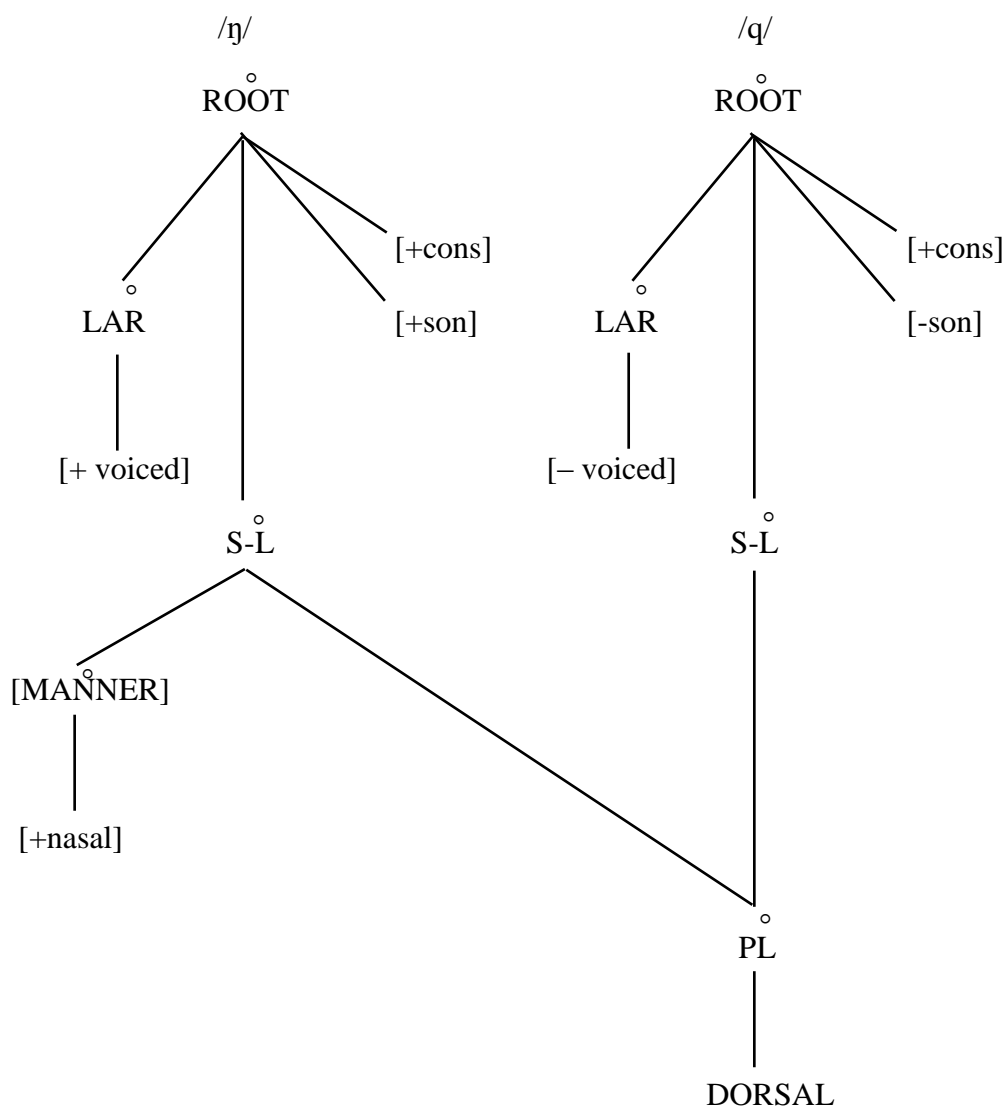


Figure 7 The Output Process of NHA in /mq/

Figure 8 below illustrates the process of delinking the nasal coronal /n/ from its distinctive features. As the diagram shows, the assimilation process, based on the Feature Geometry model by Clements (1985), consists in spreading the labial (LAB) feature linked to the labial /b/ leftwards to the nasal coronal /n/, and simultaneously delinking the coronal feature of the nasal coronal /n/ from its own place of articulation

as seen in (d.i). Therefore, the nasal coronal /n/ comes to be articulated as the nasal labial /m/ which has the same place of articulation as the labial /b/ as demonstrated in **Figure 8**.

(d.i) Underlying Form: /nb/

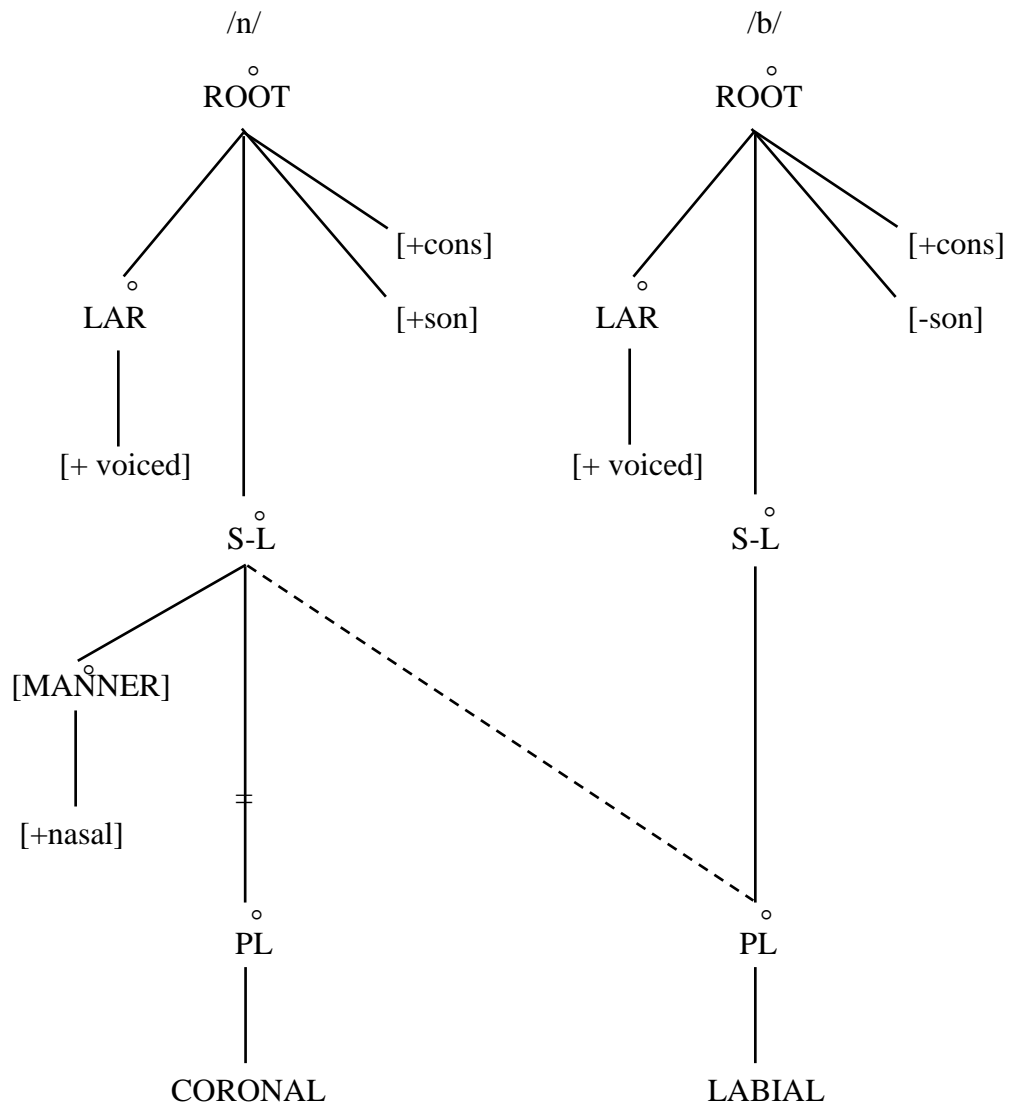


Figure 8 The Process of Delinking the Coronal Feature /n/

(d.ii) Output: [mb]

Figure 9 below shows that the nasal coronal /n/ acquired the distinctive features of the labial /b/ after the process of spreading to be articulated as the nasal labial /m/.

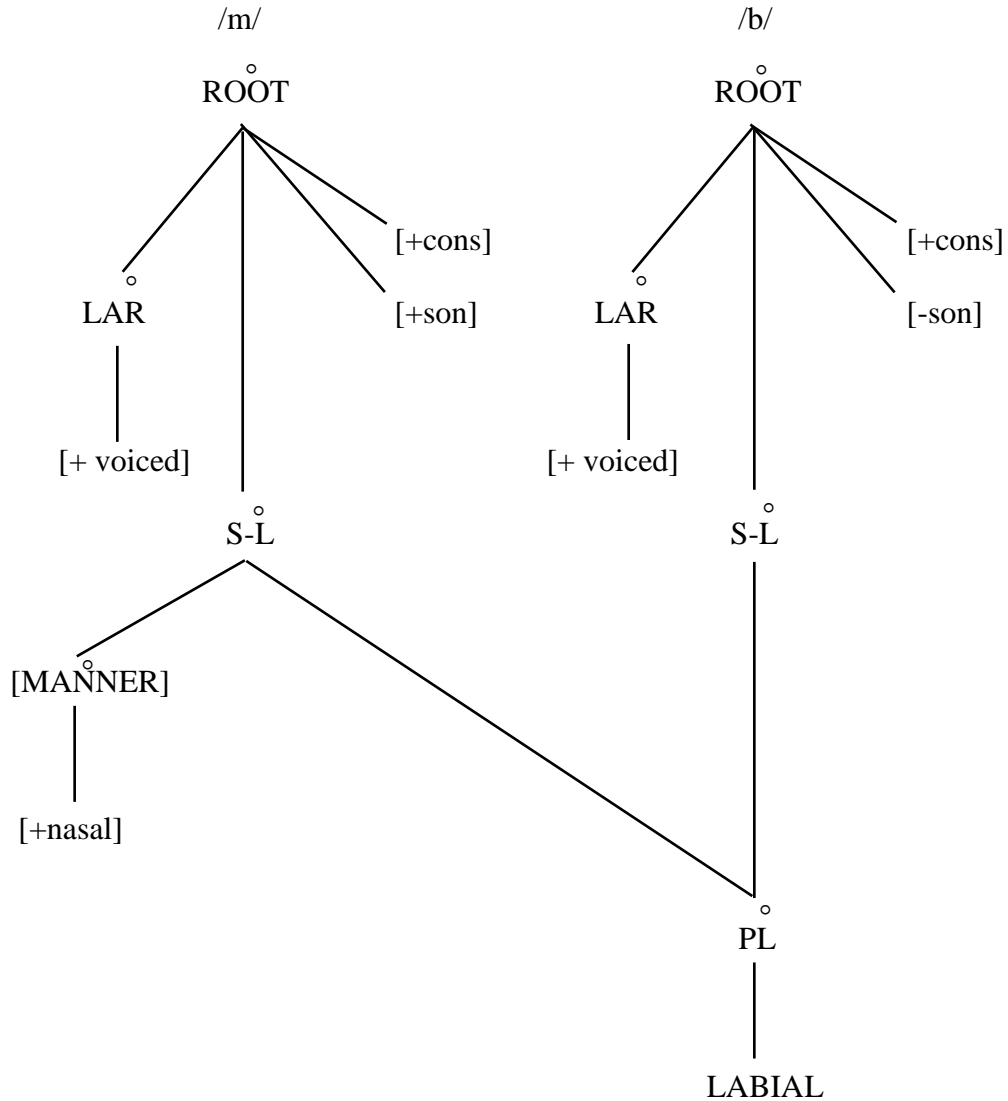


Figure 9 The Output Process of NHA in /nb/

Figure 10 below illustrates the process of delinking the nasal coronal /n/ from its distinctive features. As the diagram shows, the assimilation process, based on the Feature Geometry model by Clements (1985), consists in spreading the coronal (COR) feature linked to the coronal /t/ leftwards to the nasal coronal /n/,

simultaneously delinking the coronal feature of the nasal consonant /n/ from its own place of articulation as seen in (e.i). Therefore, the nasal coronal /n/ acquired the distinctive features of the coronal /t/ as demonstrated in **Figure 10**.

(e.i) Underlying Form: /nt/

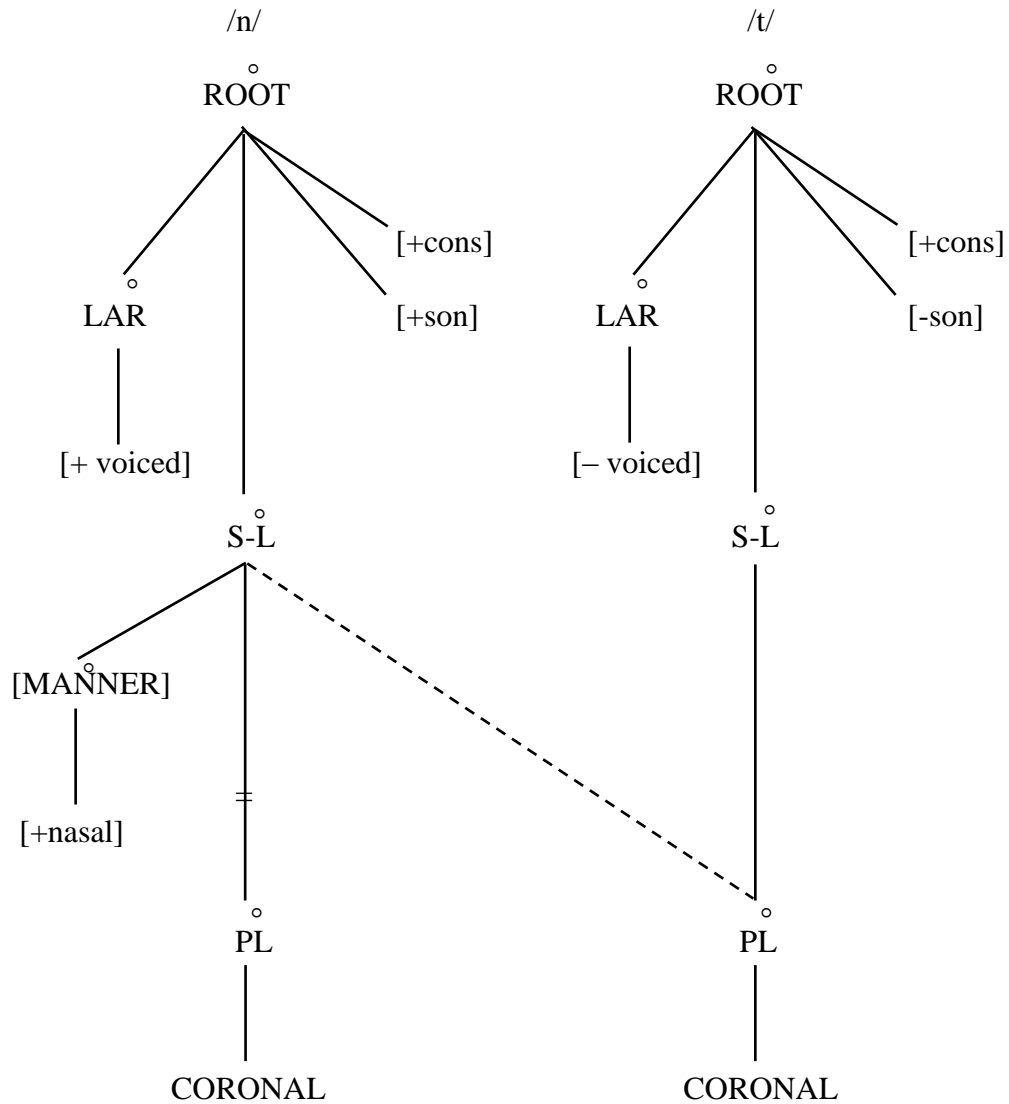


Figure 10 The Process of Delinking the Coronal Feature /n/

(e.ii) Output: [nt]

Figure 11 below shows that the nasal coronal /n/ acquired the distinctive features of the coronal /t/ after the process of spreading its place of articulation features.

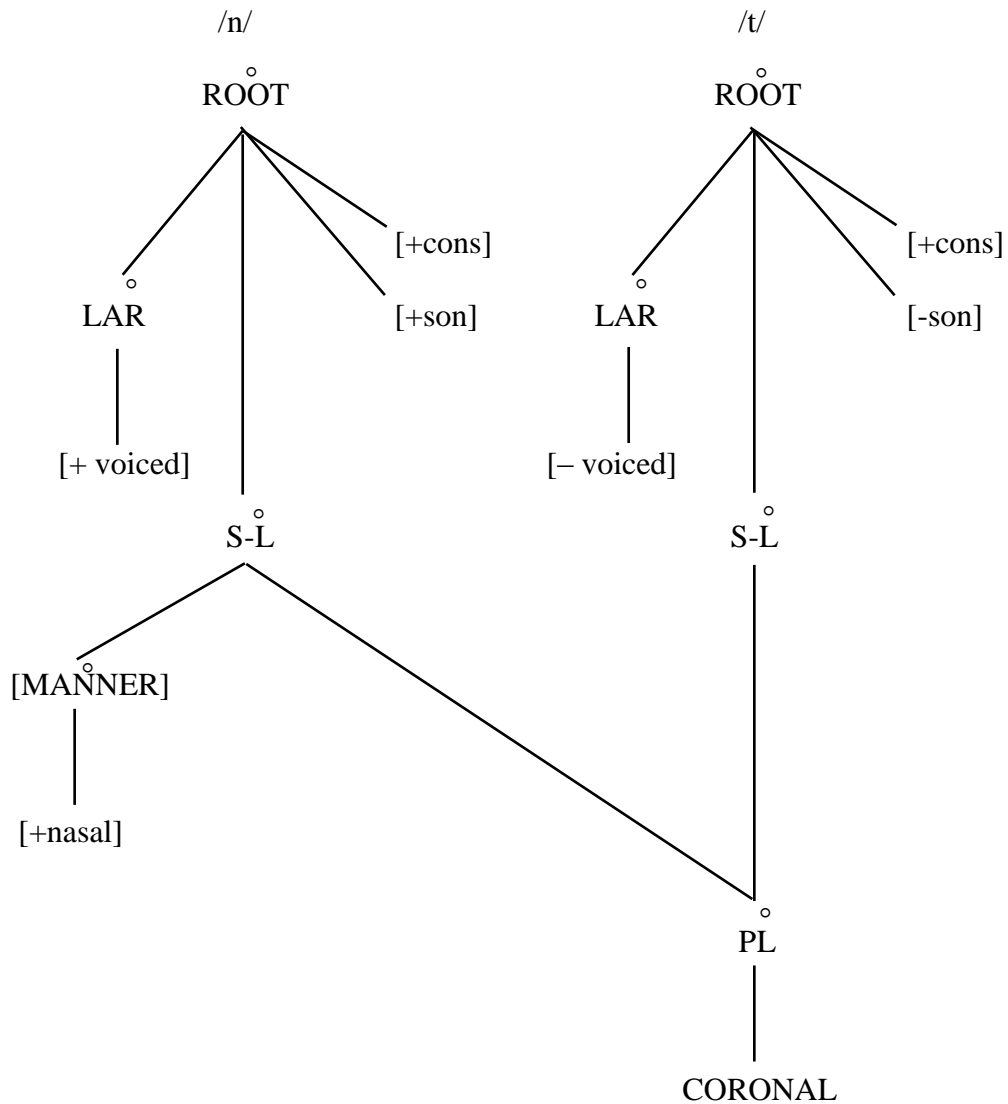


Figure 11 The Output Process of NHA in /nt/

In fact, the presentation of the diagrams in the figures **1, 2, 3, 4 and 5** based on the Feature Geometry model by Clements (1985), facilitate to formulate the final rule of NHA in YTD as demonstrated earlier in **Figure 1**. Thus, it can be summarised that this captures in a rather direct way the idea that the two consonants share their place of articulation (Spencer, 1995). In short, the process that takes place here is that the dorsals /g/, /k/ and /q/, the labial /b/ and the coronal /t/ disseminate its place of articulation features to the preceding segment as illustrated in the examples **1, 2, 3, 4**

and 5.

By now, it can be concluded that ‘one of the obvious advantages and improvements of autosegmental phonology over segmental phonology is the representation of the process of assimilation, which is seen as autosegmental spreading rather than mere changing of values in a feature matrix’ (Teoh, 1994: 10). To put it more simply, the features of labials (e.g., the labial /b/ as seen in the examples of YTD in **(d)** spread its features and autosegmentally extend to adjacent position (e.g., the coronal /n/). It is also the case in **a, b, c** and **e**. With this representation the class of assimilation rules in YTD has a natural basis that constrains what is a possible assimilation process and thereby helps write down the possible rule of NHA of the YTD and hence presumably facilitate in dialect acquisition. Moreover, this result comes in line with the claim of Clements (1985) that assimilation of the place of articulation commonly affects nasals and laryngeal features.

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