The Phonetic Realizations of the
Quiescent /n/ in Classical Arabic:
A Generative Phonology Perspective

Mohammad Saraireh, Department of English, Yarmouk University,
Irbid, Jordan

Abstract
The phenomenon of the quiescent /n/ in Classical Arabic was described by ancient Arab grammarians. It has also been dealt with by recent Arab scholars. This paper accounts for this phenomenon within the framework of the Generative Phonology Theory. The researcher postulates two analyses for this phenomenon. In the first one, the researcher uses the lexical level as the underlying representation (i.e. lexical representation). In the second, an abstract level for /n/ is postulated in the underlying representation from which phonetic ones are derived. In both analyses formal rules are suggested by using the distinctive features of Arabic. The reader may consider the set of data for a totally different analysis.

1. Introduction
The quiescent /n/ (an-Noon as-Saakina (i.e. vowelless /n/)), which is /n/ not immediately followed by a [-syllabic] segment in Classical Arabic (hereafter CA), has many different phonetic realizations. This phenomenon was fist dealt with in the works of many ancient Arab grammarians such as Ibn Jinni’s Sir Sinaaçat al-Içraab, Sibawaih’s al-Kitaab, and al-Zamakhshari’s al-Mufassal, among others. However, the branch of Arabic phonology known as Ahkaam al-tajweed "the perfection of the pronunciation of the Qur'an) appeared at the end of the fourth centruey and the beginning of the fifth (Islamic calendar) (Al-Hamad, 2003). Many ancient scholars dealt with this phonemon such as Al-Khaqani Al-
Abhath Al-Yarmouk “Lit. & Ling

408

"Abhath Al-Yarmouk “Lit. & Ling

baghdadi (died 325 Islamic Calendar (IC)), Al-Sa'idi (died 410 IC), Al-Qaysi (died 437 IC), and Al-Dani (died 444 IC) among many others (See Al-Hamad, 2003: 24-44 for a longer list of those people). Also, many recent linguists have dealt with this phenomenon, such as Ibn al-Jazari (died 833 IC), and Othman (1980), to name but a few. It might be worth mentioning that the recent ones have not added anything considerable to the descriptive works of the ancient scholars. Most of the recent works are mostly repetitions of the older ones.

However, the phenomenon of the quiescent /n/ has not been analyzed within the framework of any modern theory of phonology. Therefore, the purpose of this paper is to reexamine the phenomenon of the quiescent /n/ in CA within the framework of the Standard Generative Phonology Theory\(^1\) to account for its (i.e., the quiescent /n/) different phonetic realizations in a more adequate analysis using formal phonological rules, and not a mere descriptive account with lists of sounds.

2. Transcription

Since there are transcribed sets of CA data in this paper, the following is a description of the symbols that are used to represent the speech sounds of CA: (Note: (  ) under a symbol indicates velarization or an emphatic sound, and ( ˜ ) over a vowel indicates nasalization. \(^2\)

2.1 Consonants

The consonant symbols used in this paper follow the IPA except the following ones because they will be used in a forthcoming paper about the computerization of Arabic phonology by using Visual BASIC. In this process, a symbol cannot be used more than once. So a /d/ cannot be used once to symbolize the first

---

\(^1\) In a forthcoming paper, the researcher may propose an alternative analysis using an autosegmental approach and feature geometry.

\(^2\) Vowel nasalization is not phonemic in Arabic.
sound in the word "dog" and another for the first sound in the word "judge."

1. /t/ voiceless dental emphatic stop.3
2. /d/ voiced alveolar emphatic stop.
13. /ʎ/ voiced interdental emphatic fricative.
16. /ʂ/ voiceless alveo-dental emphatic fricative.
17. /š/ voiceless palatal fricative.
19. /ɣ/ voiced dorso-uvular fricative.
20. /ʃ/ voiced pharyngeal fricative.4

2.2 Vowels

1. /i/ [-long] [-back] [+high].5 /i:/ also [+long]
2. /u/ [-long] [+back] [+high]. /u:/ also [+long]
3. /a/ [-long] [+back] [-high]. /a:/ also [+long]
4. The "^" over a vowel indicates nasalization.

3. Previous Studies

Ancient as well as recent Arab scholars have established the different environments for each of the different phonetic realizations of the quiescent /n/ not only by listing the sounds that are responsible for triggering the phonetic change but by specifying

---

3 Whether the term “emphatic” is the right one or not is irrelevant to the discussion in this paper. Other terms and distinctive features have been suggested. The reader can refer to Mahadin (1996: 17-51) and Hoberman, R. (1996: 839-47) for a thorough argument of what I call here “emphatic” sounds.

4 The phoneme /c/ seems to have different dialectical pronunciations. Moukht (1986: 5) describes it as fricative. To me it is fricative. While al-Najjar (1984: 9) lists it with the stop sounds. However, whether it is fricative or not is not at issue in this paper.

5 Note that in Arabic
1. [-high] vowels are [-rounded]
2. [-back] vowels are [-rounded]
3. [+high] [+back] vowels are [+rounded]
the kind of change as well. The following is a list of their classification. The quiescent /n/ does not exhibit any change when it is followed by one of the following sounds: /ʔ, ɬ, h, ŋ, x, γ/. When it is followed by one of these sounds, /l, r, m, w, y, ɣ/, it completely assimilates (it has "idhghaam" assimilation), and there is "ghunna," nasalization. When /n/ proceeds /b/, it becomes [m] (They named this "iqlaab" conversion), and also there is "ghunna," nasalization. And /n/ disappears (It exhibits "ikhf'aa", disappearance) when it is followed by one of the following sounds /f, t, ɭ, ɭ, ɭ, ʐ, ʂ, ɕ, ʃ, j, k, q/, and there is "ghunna," nasalization. It is worth mentioning that they said that when /n/ is followed by /l/ or /r/ there is no marked vowel nasalization, even when there is complete assimilation. This point needs a spectrographic analysis to establish whether there is nasalization or not. Meanwhile, the researcher will assume that /l/ and /r/ behave just like the other sounds in this group.

4. The Distinctive Features of Speech Sounds of CA

To be able to formulate rules to account for the behavior of the quiescent /n/ in the framework of the Generative Phonology Theory, it is necessary that the distinctive features of speech sounds in CA be established. Based on the works of Halle and Chomsky, 1968; Brame, 1970; Schane, 1973; and Mahadin, 1997, the present researcher has worked out the distinctive features of the speech sounds of CA provided in Appendix B.

5. Data Collection

The given sets of data have been collected in the following way: Some of the examples that show the different phonetic realizations have been taken from the works of the above mentioned authorities, which are basically from the Qur'an. To make the phenomenon clearer, the researcher, in some areas, added other examples to show that the phonetic realizations of the quiescent /n/ are not possible in certain environments.
6. Data Categorization

Following the earlier description of the behavior of the quiescent /n/, the researcher could establish four groups of data provided in Appendix A. In Group A, we notice that /n/ does not exhibit any changes (when the underlying representation (UR), which consists of the utterances of words in isolation, is compared with the surface representation (SR), which is the pronunciation of words in normal continuous speech). In groups B, C, and D, /n/ exhibits certain changes according to specific environments; i.e., there is a difference between the UR’s and the SR’s. These phonetic realizations of /n/ and their environments will be discussed and analyzed in the subsequent sections of this paper. The sets of data are stated in two columns: the first one is for the suggested underlying representation; the second, for the phonetic representation. The third column provides glosses. Several examples are provided for each sound to show the contrasts of the different sequences of sounds after /n/.

7. Data Analysis

7.1. Analysis at the Concrete Lexical Level (No Abstract Level)

The analysis of the data is based on the observation of what happens to the quiescent /n/ in different environments. The most common distinctive features of the given sounds that trigger the phonetic realization are established. These distinctive features are used in the formulation of the phonological rules.

7.2. Rule Formulation

In Group A, it is possible to notice that /n/ does not undergo any changes when it is followed by any of the guttural (See Spenser, A. 1996 for more information) sounds /?, h, h, c, x, y/. These sounds can be described as [-syl] and [-cons].

In Group B, the set of data shows that /n/ completely assimilates to the sounds /l, r, m, n, w, y/ when they immediately

---

6 Kenstowicz and Kisseberth (1977: 138) also call it "lexical representation."
follow it forming a geminate sound (a long consonant). The vowel that proceeds /n/ in the UR becomes markedly nasalized in the SR. It could also be noticed that such a kind of assimilation applies across word boundary only. The facts in this group could be accounted for by the following two phonological rules:

B.1 Marked Vowel Nasalization (A general rule is suggested in 7.3)

\[ [+\text{syl}] \rightarrow [+\text{nas}] / \quad +\text{cor} \quad (#) \quad -\text{syl} \quad +\text{son} \]

B.2 /n/ Complete Assimilation

\[ (+\text{nas} +\text{cor}) \rightarrow [\alpha \text{F}] / \quad +\text{son} \quad -\text{syl} \quad \alpha \text{F} \]

Rule Application (NA = Not Applicable)

URs  γαfu:run#rahi:m ka:na#rahi:ma ?inrada' a nara:
B.1  γαfu:rûn#rahi:m NA NA NA
B.2  γαfu:rûr#rahi:m NA NA NA
SRs  γαfu:rûr#rahi:m ka:na#rahi:ma ?inrada' a nara:

In Group C, /n/ maintains its nasal feature, but it loses its coronal feature and shares the anterior feature of /b/, thus becoming [m]. The vowel that immediately precedes [m] becomes markedly nasalized. This phonetic realization may be accounted for by the following two phonological rules:

---

7 This kind of assimilation applies within one word on semantic/ morphological basis because the resultant SR’s resemble already existing words, or nonsense words. For example, the word /sinwa:n/ means “growing out of a single root,” but if the rule of assimilation is applied, it becomes /giwwa:n/ which is not a word. Also, there are several exceptions to the application of this rule across word boundaries for the same reason. For example, /man#ra:q/ “who is a magician,” but with assimilation, it becomes /mâr#raq/ which means “a passer by, or something which goes through.”
C. 1 Marked Vowel Nasalization

\[[+ \text{syl}] \rightarrow [+ \text{nas}] / [+ \text{nas}] (\#) \left( + \text{ant} - \text{son} \right) \]

C. 2 /n/ Partial Assimilation (to /b/)

\[[+ \text{nas} \quad + \text{cor}] \rightarrow [+ \text{ant} \quad - \text{cor}] \quad / \quad (\#) \left( + \text{vcd} - \text{del rl.} \quad + \text{ant} - \text{cor} \right) \]

Rule Application

URs yanbaγi: sami:C#an#baši:ra nabC ka:tibi#naṣṣin
R C.1 yâmbaγi: sami:C#an#baši:ra NA NA
R C.2 yâmbaγi: sami:C#am#baši:ra NA NA
SRs yâmbaγi: sami:C#am#baši:ra nabC ka:tibi#naṣṣin

In Group D, it could be noticed that /n/ gets deleted when it is followed by one of the following sounds /f, t, d, ţ, ð, ș, j, k, q/. The vowel that precedes /n/ becomes markedly nasalized. This fact was also realized by Nilson (1985: 21) who says “… the tongue does not quite touch the alveolar ridge for the /n/, the vocal cavity holding the shape of the preceding vowel and the total sound articulated through the nasal cavity.” It should be noted here that the markedly nasalized vowel (in the SR) is relatively longer than that in the original (UR) utterance. This could be interpreted as a kind of compensatory lengthening (prolonging). Consider the following rules:

D. 1 Marked Vowel Nasalization

\[[+ \text{syl}] \rightarrow \left( + \text{nas} \quad + \text{long} \right) / \quad \left( + \text{nas} \quad + \text{cor} \right) (\#) \left\{ \begin{array}{l} - \text{ant} \quad - \text{cor} \\ - \text{son} \quad - \text{vcd} \\ + \text{cor} \end{array} \right\} \]
D. 2 /n/ Deletion

\[
\begin{align*}
  &+ \text{nas} + \text{cor} \rightarrow [\emptyset] \quad (#) \quad \{ - \text{ant} - \text{cor} - \text{son} - \text{vcd} + \text{cor} + \text{son} + \text{cor} \}\n\end{align*}
\]

Rule Application

URs: unθa: qawlân#0aqi:la: labisna:#0iyaban naθu:ru
D.1 ?unθa: qawlân#0aqi:la: NA NA
D.2 ?ūθa: qawlâ#0aqi:la: NA NA
SRs: ?ūθa: qawlâ#0aqi:la: labisna:#0iyaban naθu:ru

7.3. A General Rule for Marked Vowel Nasalization

The marked vowel nasalization rules, namely B.1, C.1, and D.1 can be collapsed in the following rule: A vowel becomes markedly nasalized if it is followed by a nasal consonant within or across word boundary and the nasal consonant is followed by a non-gutteral consonant (i.e. a pharyngal sound).

\[
\begin{align*}
  &+ \text{nas} + \text{cor} \rightarrow + \text{nas} + \text{cor} \quad (#) \quad - \text{cons} - \text{syl}\n\end{align*}
\]

8. Analysis with an Abstract /N/

When the fist analysis is closely examined, we notice that the rule in Group C is too complicated. However, it is inevitable because we cannot formulate a rule for Group A because /n/ does not undergo a change in this environment. Moreover, we notice that Group C may qualify for elsewhere environment rather than accounting for all these scattered sounds in the rule. Therefore, I suggest this alternative analysis where an abstract /N/ is postulated in the underlying representation.

Before accounting for the changes in the groups of data, a general rule for marked vowel nasalization is formulated. A rule
has been suggested in the first analysis; this rule is not significantly different in the general sense.

8.1. A General Marked Vowel Nasalization Rule

Marked vowel nasalization can be accounted for by assuming that it occurs only when /N/ either undergoes assimilation or deletion. Such nasalized vowels are prolonged. This entails that there is no marked vowel nasalization when /N/ becomes [n] when followed by a vowel or a guttural sound, and word finally. (See section 9 for rule ordering)

\[
\begin{align*}
\text{[+ syl]} & \rightarrow \left\{ \begin{array}{c}
\text{[+ nas]} \\
\text{[< long]} \\
\text{\textbackslash /N/ (#) - \{} \\
\text{[+ syl]} \\
\text{\textbackslash - cons}\end{array} \right\}
\end{align*}
\]

We notice that [n] occurs at the end of words, before a vowel, and before a guttural sound. We can account for this fact in a formal rule as follows (no velar nasal in Arabic):

\[
\begin{align*}
\text{/N/} & \rightarrow \left\{ \begin{array}{c}
\text{[+ cor]} \\
\text{\textbackslash / _________ (#)} \\
\text{\{} \\
\text{[+ syl]} \\
\text{\textbackslash - cons}\end{array} \right\}
\end{align*}
\]

Since there is no assimilation or deletion here, there is no marked vowel nasalization in this group.

Rule Application (NA = Not Applicable; VN= Vowel Nasalization)

<table>
<thead>
<tr>
<th></th>
<th>UR</th>
<th>VN</th>
<th>N to n</th>
<th>SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>miN#ha:d</td>
<td>NA</td>
<td>min#ha:d</td>
<td>min#ha:d</td>
<td></td>
</tr>
</tbody>
</table>
In Group B, N completely assimilates to the following sounds in this group. The vowel that precedes N becomes markedly nasalized and prolonged. Here are the rules:

\[
N \rightarrow [\alpha F] / _______ \# \begin{cases} + \text{ son} \\ - \text{ syl} \end{cases} \]

Rule Application

<table>
<thead>
<tr>
<th>URs</th>
<th>γafu:rûš#rahi:m ka:Na#rahi:ma ?inrada(^c)a Nara:</th>
</tr>
</thead>
<tbody>
<tr>
<td>VN</td>
<td>γafu:rûš#rahi:m NA NA NA</td>
</tr>
<tr>
<td>N to n</td>
<td>NA ka:na# rahi:ma ?inrada(^c)a nara:</td>
</tr>
<tr>
<td>N Ass</td>
<td>γafu:rûš#rahi:m NA NA NA</td>
</tr>
<tr>
<td>SRs</td>
<td>γafu:rûš#rahi:m ka:na#rahi:ma ?inrada(^c)a nara:</td>
</tr>
</tbody>
</table>

In Group C, /N/ assimilates to /b/ with regard to point of articulation becoming [m], a non-coronal nasal. The vowel that precedes [m] becomes markedly nasalized. The following rules account for this process (The same vowel nasalization rule):

N Partial Assimilation Rule: (Compare with N to m before m)

\[
N \rightarrow \begin{cases} + \text{ ant} \\ - \text{ cor} \end{cases} / _______ (#) \end{cases} \begin{cases} + \text{ vcd} \\ - \text{ del rl.} \\ + \text{ ant} \\ - \text{ cor} \end{cases}

Rule Application

<table>
<thead>
<tr>
<th>URs</th>
<th>yaNba: sami:(^c)aN#baši:ra Nab(^c) kati:bì#Našš</th>
</tr>
</thead>
<tbody>
<tr>
<td>VN</td>
<td>yaNba: sami:(^c)aN#baši:ra NA NA</td>
</tr>
<tr>
<td>N to n</td>
<td>NA NA nab(^c) kati:bì#Našš</td>
</tr>
<tr>
<td>N to m</td>
<td>yaNba: sami:(^c)am#baši:ra NA NA</td>
</tr>
<tr>
<td>SRs</td>
<td>yaNba: sami:(^c)am#baši:ra nab(^c) kati:bì#Našš</td>
</tr>
</tbody>
</table>

In Group D, N gets deleted when it is followed by one of the sounds listed above. Since we have already accounted for the other sounds in the phonemic inventory of CA, it is possible to use the elsewhere condition in this rule. The vowel that precedes N gets markedly nasalized and prolonged. Here is the rule for N complete assimilation:

\[
N \rightarrow [\emptyset] / _______ \# \text{ elsewhere}
\]
9. Rule Interaction (Rule Ordering)

It could be noticed that the marked vowel nasalization rule occurs only when /n/ undergoes assimilation or gets deleted. This fact was also realized by Nilson (1985: 21) who maintains, “… the rules of tajwid\(^8\) single out the geminate consonants for nasality, with the result that they are pronounced with an intensified and conscious nasality.” But in reality, marked vowel nasalization also takes place when /n/ is deleted. For example, in Group A, there is no marked vowel nasalization because there is no change for /n/ (i.e. there is no assimilation or deletion.) In contrast, there is marked vowel nasalization in groups B, C, and D. In Group B, /n/ undergoes a partial assimilation. In Group C, /n/ assimilates completely. And in Group D, /n/ gets deleted. This proves that the occurrence of marked vowel nasalization is conditioned by the occurrence of /n/ assimilation or deletion. This means that the application of the later rules (i.e., /n/ assimilation and deletion) makes possible the application of the marked vowel nasalization rule. Therefore, the marked vowel nasalization rule and the /n/ assimilation or deletion rules occur in a counterbleeding order (If the later assimilating or deletion rules apply (the bleeding rule), the earlier marked vowel nasalization (the bled rule) does. This kind of rule interaction is described by Kenstowicz and Kisseberth (1977: 158) as follows: "If the bled rule is applied first, followed by the bleeding rule, we may say that the rules have applied in a counterbleeding order.” However, the N assimilation or deletion rules apply freely with regard to each other.

---

\(^8\) “Tajwid” is the Arabic term for the perfection of the recitation of the Holy Qur’an.
## Appendix A

### Group A

#### Lexical Representation

<table>
<thead>
<tr>
<th>#</th>
<th>Lexical Representation</th>
<th>Phonetic Representation</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>yan?awna stay away-they</td>
<td>yan?awna</td>
<td>they stay away</td>
</tr>
<tr>
<td>2</td>
<td>γuθa:?an#ahwa: grass black</td>
<td>γuθa:?an#ahwa:</td>
<td>black grass</td>
</tr>
<tr>
<td>1</td>
<td>?anha:r rivers</td>
<td>?anha:r</td>
<td>rivers</td>
</tr>
<tr>
<td>2</td>
<td>min#ha:d from guide</td>
<td>min#ha:d</td>
<td>of a guide</td>
</tr>
<tr>
<td>h 1</td>
<td>wanhar and- slaughter-you (nom)</td>
<td>wa-nhar</td>
<td>and you slaughter</td>
</tr>
<tr>
<td>2</td>
<td>γafu:run#ali:m forgiving and tolerant</td>
<td>γafu:run#ali:m</td>
<td>forgiving and tolerant</td>
</tr>
<tr>
<td>C 1</td>
<td>?anCamta give bounty-you</td>
<td>?anCamta</td>
<td>You give bounty</td>
</tr>
<tr>
<td>2</td>
<td>nasran#Cazi:za: victory dear</td>
<td>nasran#Cazi:za:</td>
<td>dear victory</td>
</tr>
<tr>
<td>γ 1</td>
<td>fasayun#ya:n then they will wag</td>
<td>fasayun#ya:n</td>
<td>then they will wag</td>
</tr>
<tr>
<td>2</td>
<td>ma:?in#ayru#:a:sin incorruptible water</td>
<td>ma:?in#ayru#:a:sin</td>
<td>incorruptible water</td>
</tr>
<tr>
<td>x 1</td>
<td>?al-muxaniqa the-strangled</td>
<td>?al-muxaniqa</td>
<td>that which is strangled</td>
</tr>
<tr>
<td>2</td>
<td>Cali:man#xabi:ra: has knowledge and acquainted</td>
<td>Cali:man#xabi:ra:</td>
<td>has knowledge and acquainted</td>
</tr>
</tbody>
</table>

### Group B

| y 1 | xayran#yarah good deed sees-he-it | xayrây#yrah | good deed he sees it |
| 2 | ka:na#yuri:du was-he want-he | ka:na#yuri:du | he (has) wanted |
| 3 | bunya:n building | bunya:n | building |
| 4 | niya:m they-sleeping/asleep | niya:m | are sleeping/asleep |
| w 1 | ?ila:han#wa:hidan God one | ?ila:hwâw#wa:hidan | one God |
| 2 | ?anna#wa:lidan that a parent | ?anna#wa:lidan | that a parent |
| 3 | minwa:la method | minwa:la | method |
4. nuwa:šil  
we continue  

m 1. kita:bin#mubi:n  
book clarifying  
2. maka:ni#mu:sa:  
place Moses  
3. yunmi:  
tell-he  
4. nami:r  
clear  

n 1. min#niCmatin  
from bounty  
2. ?a:mana#la-hu  
believed for-him  
3. makkanni:  
enabled-he-me  
4. sunu:nu:  
‘a kind of a bird’  

l 1. man#lam  
who neg/past  
2. mina#l-?ajda:ə  
from the-sepulchres  
3. ******11  
4. mana:l  
goal  

r 1. γafu:run#rahi:m  
forgiving merciful  
2. ka:na#rahi:ma  
was-He merciful  
3. ?inrada:Ca  
detred-he  
4. nara:  
we-see  

---

9 Compare this with (N to m before b) rule.

10 Here, the /ʔa/ part of the definite article /ʔal-/ gets deleted (See Brame, 1974). Therefore, the following word starts with /l/.

11 the sequence /nl/ in one word does not seem to exist in CA.

12 Some Arabists might object to this word as substandard. A better term would be /ʔirtada:/.
Abhath Al-Yarmouk “Lit. & Ling

Group C

b 1. yanba\(i\): ought to be
2. sami:\(\cdot\)am\(\cdot\)ba\(\cdot\)i:ra with (sharp) hearing
hearer viewer
3. nab\(\cdot\)un spring
4. ka:tibun#nas\(\cdot\)in script writer

Group D

s 1. ?al-?an\(\cdot\)a:r the supporters
2. ri:han\(\cdot\)a:rar wind strong
3. ka:na\(\cdot\)a:diqan he was truthful
was-he truthful
4. bi-nu\(\cdot\)ubin with-distress
    with (sharp) hearing

\(\partial\) 1. ?an\(\cdot\)artukum I warned you
2. man\(\cdot\)a who is he that
3. yaku:nu\(\cdot\)ahaban it becomes gold
be-it gold
4. na\(\cdot\)a:r warner

\(\theta\) 1. ?un\(\cdot\)a: female
2. qawlan\(\cdot\)aqli:la: heavy saying
    burden/deed
3. labisna\(\cdot\)iyaban we put on dresses
    dressed-we dresses
4. na\(\cdot\)u:ru we rebel
    we-rebel

k 1. kuntum you were
were-you
2. kitabun\(\cdot\)kari:m a noble book
    book noble
3. sakana\(\cdot\)ka\(\cdot\)i:ra: he stood still much
    stood still-he#much
4. yunakkis he lowers (a flag)
    he lowers
1. ?anjytana: saved-You-us
   saved-You-us
2. xalqû:jadî:d creation new
   xalqû:jadî:d new creation
3. ka:na:jalîsan was-he sitting down
   ka:na:jalîsan he was sitting down
4. najwa:hum secret talk-their
   najwa:hum their secret talk

§ 1. fa?anšarna: then-spread-we
    fa?anšarna: then we spread
2. mi#šarrin from evil
   mi#šarrin of evil
3. ?ayna#šuraka:?iy where partners-My
    ?ayna#šuraka:?iy where are My partners
4. našara he spread/sawed
    našara he spread/sawed

q 1. ?inqalabu: returned-they
    ?inqalabu: they returned
2. sami:cû#qarî:b hearing-He close
    sami:cû#qarî:b He is hearing and close
3. ðakarna:#qaryatan we mentioned a town
    ðakarna:#qaryatan we mentioned a town
4. naqara he tapped
    naqara he tapped

s 1. ?al-?îsa:n Man
    ?al-?îsa:n the-human
2. ?â#sa?altum that you asked
    ?â#sa?altum that you asked
3. ka:na#ša?i:dan he was glad
    ka:na#ša?i:dan he was glad
4. nasi:m breeze
    nasi:m breeze

d 1. ?anda:da: equals
    ?anda:da: equals
2. mustaqi:mî#di:nan straight religion
    mustaqi:mî#di:nan straight religion
3. ?inna#dunya:hu verily his worldly life
    ?inna#dunya:hu verily his worldly life
4. muna:di:n callers
    muna:di:n callers

ț 1. fa-ţalaqa: then they both went on
    fa-ţalaqa: then they both went on
2. fidyatû#ta:a:mu feeding as ransom
    fidyatû#ta:a:mu feeding as ransom
3. ka:na\#\#abi:ban ka:na\#\#abi:ban was-he physician
he was a physician

4. qanu:ţ qanu:ţ desperate
desperate

z 1. munzalan mûzalan a residence
place

2. şa\#i:dan\#zalaq: şa\#i:da\#zalaq: a high bare (place)
high (place) slippery

3. ja:\#ani:za:?iran ja:\#ani:za:?iran he came to me as a visitor
came-he-me visiting

4. niza:r niza:r Nizar (proper noun)
Nizar

f 1. fa-nfalaqa fâ-falaqa then it split
then-split-it

2. xa:lidân#fi:ha: xa:lidâ#fi:ha: he be in it eternally
eternally in-it

3. yasma\#u:na#fa-la: yasma\#u:na#fa-la: they listen but do not
listen then-not

4. yaru:fu yaru:fu it exceeds
it-exceede

d 1. manda\#d mádu:d ordered
ordered

2. ?in#d?îruhu ?î#d?îruhu if/that his evil
if/that evil-his

3. ya\#i:šu:na\#\#danaka ya\#i:šu:na\#\#danaka they live a hard life
they live hard

4. na:dira na:dîra fresh-they (female)
fresh-they (fem.)

ô 1. yanəru:n yâd,uru:n they are looking
they-look

2. ma\#alan#dalla ma\#alan#dalla an example remained
example remained

3. ra\#i:suna:#dîra fir ra\#i:suna:#dîra fir our president is victorious
president-our victorious

4. yuna\#d im he-arrange
he-arrange
### Appendix B

Distinctive Features of CA

(Based on Chomsky & Halle (1968), Brame (1970), Schane (1973), and Mahadin (1997))

<table>
<thead>
<tr>
<th></th>
<th>syl</th>
<th>cons</th>
<th>son</th>
<th>cont</th>
<th>ant</th>
<th>cor</th>
<th>strd</th>
<th>nas</th>
<th>voiced</th>
<th>round</th>
<th>back</th>
<th>high</th>
<th>low</th>
<th>long</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>b</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>f</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>t</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>d</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>τ</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>θ</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ď</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>n</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>l</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>r</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>s</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>z</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>š</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ŝ</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>j</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>d</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>k</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>q</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>x</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>γ</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ç</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>?</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>w</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>y</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>i</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>u</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>a</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The paper was received on October 12, 2004 and accepted for publication on March 28, 2005.

References


Dani, Abu Amr Othann bin Sa'eed, Al- (died 444 Islamic Calendar) No date. Al-Tahdeed fi l-Itqan wa t-tajweed.


Khanqani, Abu Muzahim Musa bin Ubaid illaah, Al-. (died 410) No date. Al-qaseeda al-Khaanqaniyya.


Qaysee, Makkee bin Abi Taalib, Al- (died 437) No date. *Ar-Ri‘uuyah*. 
Sa'eedi, Abu Al-Hasan Ali bin Ja'far bin Muhammad Ar-Razi, Al-
(died 410) No date. *Ikhtilaafu l-Qurra' fi l-laam wa n-noon.*

------------------. *At-Tanbeeh ʿala l-Lahn l-jaliyy wa l-Lahn l-Khafiyy.*

Schane, Sanford A. 1973. *Generative Phonology.* Prentice-Hall,


Blackwell Publishers Inc.

Zamakhshari, al. (no date). *Al-Mufassal fi ṣinaːat l-Icraab.* Daru l-
Jil, second edition.