

A Phonological Study of /n/ in Standard English and Standard Arabic

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Abstract

The present study is concerned with studying the consonant /n/ phonologically in both standard English and standard Arabic. Thus, a detailed analysis has focused on its assimilation patterns and its features as a nasal consonant and how it affects the neighboring sounds, in addition to its behavior as a hidden sound when followed by certain consonants. The research under analysis aims at identifying the points of similarity and difference between such patterns and features of /n/ in English and Arabic. Accordingly, it is hypothesized that the similarities are more than the differences between those patterns and characteristics in the two languages. It is concluded that /n/ assimilates to the same sounds in both languages with the exception of certain sounds in one language that have no counterparts in the other one such as English /ŋ/ and /p/ and Arabic /□, ٦, ٥, q/ and /d/. Additionally, its nasalization transfers to its neighboring sounds in both languages and that it is hidden under the influence of approximately the same consonants following it in English and Arabic.

Keywords: assimilation, consonants, hiding, nasalization, variation.

الخلاصة

يعنى البحث الحالي بدراسة صوت النون الساكن دراسة صوتية في اللغتين العربية والانجليزية حيث تم التركيز، من خلال تحليل مفصل لهذا الصوت ، على نماذج إدغامه مع الأصوات الأخرى وخاصيته كصوت انفي وكيفية تأثيره على الأصوات المجاورة إضافة إلى إخفائه عندما تتبعه مجموعة محددة من الأصوات الساكنة. يهدف البحث إلى إيجاد جوانب التشابه والاختلاف لخصائص هذا الصوت في اللغتين العربية والانجليزية. ولتحقيق ذلك يمكن افتراض إن جوانب التشابه أكثر من جوانب الاختلاف لخصائص هذا الصوت في اللغتين المذكورتين. وقد توصل البحث إلى مجموعة نتائج منها ان صوت النون يدغم في نفس الأصوات في اللغتين العربية والانجليزية باستثناء بعض الأصوات التي توجد في لغة دون أخرى وان خاصية هذا الصوت كونه انفيا تنتقل إلى الأصوات المجاورة في كلا اللغتين على حد سواء. ويمكن القول ان هذا الصوت يختفي تحت تأثير نفس الأصوات في اللغتين المذكورتين.

الكلمات المفتاحية: إدغام وأصوات ساكنة وأصوات أنفية وإخفاء

1.Introduction

/n/ is one of the consonants produced when (a). the soft palate is lowered in order to allow the air to pass through the nasal cavity, (b). the tip of the tongue makes a contact with the alveolar ridge, and (c). the vocal cords vibrate when the air passes between them (Roach, 2002: 51; Crystal, 2004: 244). Thus, it can be described as nasal, alveolar and voiced.

In Arabic, there is nunation or [tanwiin] which is considered as an inflectional sound added to the final syllable of the word to indicate grammatical cases. It is of three types: [un], [an] and [in], i.e. a short vowel followed by [n] as illustrated in the following examples:

هذا رجل [haaḏaa rajulun] (this is a man).

رأيت رجلا [raʔaytu rajulan] (I saw a man).

سلمت على رجل [sallamtu ʕalaa rajulin] (I have greeted a man).

Sometimes /n/ in both English and Arabic has the same patterns, i.e. it changes into /m/ when followed by /b/ as in:

ten boys /ten boiz/ → /tem boiz/
ماء بارد [maaʔun baaridun] → [maaʔum baaridun] (cold water).

The differences arise when certain sounds in one language have no counterparts in the other one. It can be hypothesized that similarities are more than differences between patterns and features of /n/ in English and Arabic especially when it occurs as an assimilated, nasalized and hidden sound.

2./n/ in Standard English

This section deals with /n/ and its relation with neighboring sounds in certain phonological processes such as assimilation, nasalization and hiding.

2.1 Assimilation

Assimilation can be defined as "the process in which some features of a sound segment changes to become identical to a feature in a neighboring segment" (Falk, 1978:136). Consider the following patterns:

/n/ → /m/ — /p, b, m/
([http:// www.btinternet.com](http://www.btinternet.com)):

ten pens /ten penz/ → /tem penz/
ten balls /ten bolz/ → /tem bolz/
ten men /ten men/ → /tem men/

/n/ → /ŋ/ — /k, g/ (Collins and Mees, 2008:121):

ten cages /ten keiɟiz/ → /ten keiɟiz/
ten gloves /ten gl • vz/ → /ten gl • vz/

It is noteworthy that /ŋ/ does not occur as an independent segment. It is derived from a sequence of nasal and velar obstruent by means of nasal assimilation. According to Halle and Mohanan (1985), the rule is formulated as follows:

/n/ → /ŋ/: ink /ink/ → /iŋk/
long /long/ → /loŋg/ → /loŋ/
(nasal assimilation) (/g/ deletion)

However, Halle and Mohanan (Ibid) point out that the rule stated above is blocked when followed by a stressed syllable as in:

1. a. con[ŋ]gressional con[ŋ]cordance

On the other hand, /n/ changes into /ŋ/ in the following instances:

b. co[ŋ]gress co[ŋ]cord

They have concluded that /ŋ/ does not occur before stressed vowels in English though the following examples indicate that /ŋ/ occurs before both stressed and unstressed vowels:

2. li[ŋ]guist li[ŋ]guistic
Hu[ŋ]gary Hu[ŋ]garian

In this respect, Borowsky (1986) affirms that the contrast between the examples stated above in (1) and (2) is systematic, i.e. example (2) indicates that assimilation applies without reference to stress which means that the nasal + velar sequence is in a morphophonemic stem, whereas examples stated in (1) consist of prefix + root in which stress has governed alternations.

/n/ → /l, r/ — /l, r/ (Farrokhpey, 1999: 106):

Human laws /hju:mən lo:z/ → /hju:məl lo:z/
Human rights /hju:mən raits/ → /hju:mər raits/

It is noteworthy that initial /ð/ in a word following nasal /n/ in a final position changes into /n/ to be identical with such a final nasal consonant but with a dental place of articulation, a process which is referred to as progressive assimilation as in:

in the / in ðə/ → /in nə/ (Roach,2000: 142).

2.2 Nasalization

Kuiper and Allan (1996: 74) point out that nasalization occurs when the velum is lowered during the production of the vowel that precedes the nasal consonant. This is known as regressive nasalization of vowels as in: congress [kongres] → [kongres̃]. This example shows that the nasal is the source and the vowel is the target. The feature of nasalization is transferred from the source leftwards to the target.

In certain contexts, the nasal /n/ changes into /m/ since such two segments are both voiced and nasal and that they differ only in place of articulation in that /m/ is bilabial whereas /n/ is alveolar. This can be illustrated in the word *handball* /handbol/ in which the nasal /n/ is immediately followed by /d/. In order to investigate nasal assimilation, i.e. to change /n/ into /m/, the medial consonant cluster /-ndb-/ must be reduced, i.e. /d/ should be elided in order that /n/ will be adjacent to /b/. As a result, /n/ changes into /m/ to share the place of articulation of /b/, i.e. both of them will be bilabial. Consider the following rule:

Phonemic form: /handbol/

Consonant cluster reduction: /hanbol/

Nasal assimilation: /hambol/

(Parker and Riley 2005: 125- 126)

Gimson (1977: 296) affirms that phonemic assimilation involving nasality shows the following patterns: /d/ or /z/ or /ð/ → /n/. /g/ → /ŋ/.

It is indicated that such patterns which are concerned with alveolar consonants neighboring to the negative (n't) are unacceptable in RP as illustrated in the following instance: /d/ → /n/: He wouldn't do it /hi: wunn(t) du it/.*

The nasalized-asimilated form may be elided altogether:

/z/ → /n/: He doesn't know /hi: dɒnn(t) nəu/.*

/ð/ → /n/: He wasn't there /hi: wɒnn(t) neə/.*

With respect to articulation, nasals and stops have much in common. "... a nasal is a stop as regards the oral articulation, but an open sound (free passage) if we consider the nasal cavity" (Malmberg, 1963: 43). Thus, the nasal sounds are articulated like stops except that the velum is lowered to allow the air to pass through the nasal cavity (Bronstein, 1960: 100).

Nasal consonants can undergo some modifications such as the following:

1./n/ is possible to substitute /t/: I don't know /ai dəʊn n nəu/ (Jones, 1972: 82).

2./n/ can be substituted by /m/ or /ŋ/: happen /hapn/ → /hapm/.

Taken /teikn/ → /teikŋ/ (Bronstein,1960: 106).

2.3 Variations in Place of Articulation

Lodge (2009: 145) states that "the final nasal of the English word *ten* typically shares its place of articulation with that of any obstruent in the onset of the following word":

ten men /ten men/ → /teɪ̃ men/. ten friends /ten frendz/ → /teɪ̃ frendz/.

ten things /ten θɪŋz/ → /ten θɪŋz/. ten tents /ten tents/ → /ten tents/.

ten girls /ten gɜ:lz/ → /ten gɜ:lz/.

The researcher adds other examples about the consonants /ð, k, ʔ, s, ʃ, d/ and /z/ that occur initially in words following /n/ of the word *ten* and other words:

when they ... /wen ðei/ → /we • ðei/. ten cups /ten k • ps/ → /te • k • ps/.

ten jobs /te • ʔɒbz/ → /te • ʔɒbz/. ten sides /ten saidz/ → /te • saidz/.

ten shirts /ten ʃə:ts/ → /te • ʃə:ts/. ten doors /ten do:z/ → /te • do:z/.

ten zoos /ten zu:z/ → /te • zu:z/.

According to the examples cited above, it can be concluded that /n/ is hidden when followed by words beginning with such consonants.

It is noteworthy that some people occasionally do not wish to continue a particular conversation, therefore they will mention an utterance ending with a bilabial sound as in: How many have you got? [tem] (Ibid: 146).

3. [n] in Standard Arabic

[n] is a nasal, alveolar, voiced and plain Arabic consonant (Umar, 1976: 257). It is referred to as middle or vowel – like consonant since it mediates between plosives and fricatives (Anees, 1975: 66; Hassan, 1990: 87). This section is concerned with assimilation patterns of /n/ and its variants that show that it behaves as a hidden sound when followed by certain consonants.

3.1 Assimilation Patterns of [n]

[n] can be assimilated to a limited number of following consonants as shown in the following points:

1. When [n] is preceded by a vowel sound, it is assimilated to [r] since both sounds have the same place of articulation in that they are pronounced when the tip of the tongue touches the alveolar ridge (Umar, 1976: 257). Additionally, they have the same intensity: قال تعالى (واذ تاذن ربك ...) الاعراف الآية ١٦٧

[qaala taʕaala: waʔið taʔaððana rabbuka] (And when your Lord announced ...) (Shakir, 2005: 167).

[taʔaððana rabbuka] → [taʔaððar rabbuka].

2. [n] is assimilated to [l] since their places of articulation are adjacent

(Sibawayhi, 1982: 452): من لعب معه [man laʕiba maʕahu] (who plays with him?)

[man laʕiba] → [mal laʕiba].

In this respect, Al- Hamlaawi (1988: 159) indicates that this assimilation is without nasalization. However, Al – Isterabaathi (2004: 941) affirms that [n] can be assimilated to [l] and [r] with nasalization.

3. The second [n] of the word نحن [naħnu] (we) preceded by a consonant is assimilated to [l] because the vowel sound [u] at the end of this word is heavy and the other reason is related to the repetition of [n] (Hilaal, 2004: 194):

قال تعالى (... ونحن له مسلمون) ال عمران الآية ٨٤ [qaala taʕaala: wanħnu lahu muslimuun] (... and to Him do we submit) (Shakir, 2005: 95).

[wanahnu lahu] → [wanahli lahu].

4. [n] is assimilated to [w] and [y] since it is possible for [n] to keep its nasalization:

قال تعالى (ومن قبله كتاب موسى اماما ورحمة...) الاحقاف الآية ١٢ [qaala taʕaala: wamin qablihi kitaabu muusaa ʔimaaman warahmatan] (And before it the Book of Musa was a guide and mercy...) (Shakir, 2005: 579).

[ʔimaaman warahmatan] → [[ʔimaamaw warahmatan].

قال تعالى (ان يا موسى) القصص الآية ٣. [qaala taʕaala: ʔan yaa muusaa] (O Musa !) (Shakir, 2005: 452). (Al – Isterabaathi, 2004: 951).

[ʔan yaa muusaa] → [[ʔay yaa muusaa].

5. [n] is assimilated to [m] since they have adjacent places of articulation and that they are both nasal: قال تعالى (وانجيننا موسى ومن معه اجمعين) الشعراء الآية ٦٥

[qaala taʕaala: waʔanjaynaa muusaa waman maʕahu] (And we saved Musa and those with him, all of them) (Shakir, 2005: 431). [waman maʕahu] → [wamam maʕahu].

6. [n] changes into [m] when followed by the bilabial stop [b] in a word initial position in one or two words (Al – Moosili, 2001: 530): قال تعالى (ان بورك في النار) النمل الآية ٨

[qaala taʕaala: ʔan buurika finnaar] (Blessed is whoever is in the fire) (Shakir, 2005: 440). [ʔan buurika] [[ʔam buurika]. يَنْبَح [yanbah] [yambah] (to bark).

3.2 Variants of [n]

According to Bishr (2000: 349), [n] has the ability to change according to the context in which it occurs. Thus, it has certain variants. Hassan (1990: 105 – 107) describes such variants of [n] as follows:

1.[m] is pronounced when the lower lip touches the upper front teeth. It can be described as labio – dental, nasal, voiced and plain. This sound is pronounced when [n] is followed by [f] which can be described as labio – dental, fricative and plain:

يَنْفَع [yanfaʕ] → [yamfaʕ] (benefit).

2.[ɲ] is pronounced when the tip of the tongue touches the upper front teeth. It can be described as dental, nasal and voiced. This sound occurs when [n] is followed by:

a.[ð] voiced, dental, fricative and plain: ١٢ قال تعالى (... لينذر ...) الاحقاف الاية ١٢ [qaala taʕaala: ... liyundir ...] (that it may warn) (Shakir, 2005: 579).

٢١ ان ذهب [ʔin ɖahaba] (If he went ...).

b.[θ] voiceless, dental, fricative and plain: ٧٤ قال تعالى (... ان ثبتناك ...) الاسراء الاية ٧٤ [qaala taʕaala: ʔin θabbatnaaka...] (... that we had already established you ...) (Shakir, 2005: 343).

انثوي [ʔunθawi] (feminine).

c.[ɣ] voiced, dental, fricative and pharyngeal: ١٤ قال تعالى (فانظر...) النمل الاية ١٤ [qaala taʕaala: faɲ · ur ...] (consider ...) (Shakir, 2005: 440). It is noteworthy that [ɣ] is pronounced when the back of the tongue is raised towards the velum and it will be near the back wall of the pharynx (Hassan, 1990: 98).

3.[·] is pronounced when the tip of the tongue is placed against the upper front teeth and that the front part of the tongue touches the alveolar ridge. It can be described as voiced, alveolar and nasal. This sound occurs when [n] is followed by:

a.[d] alveolar, plosive, voiced and plain: ٥٩ قال تعالى (وعنده ...) الانعام الاية ٥٩ [qaala taʕaala: [waʕi · dahu ...] (And with Him ...) (Shakir, 2005: 177).

ان درس [ʔi · darasa...] (If he had studied ...).

b.[t] alveolar, plosive, voiceless and plain: ٩١ قال تعالى (... فهل انتم منتهون) المائدة الاية ٩١ [qaala taʕaala: ... fahal ʔantum mu · tahuun]. (... will you then desist) (Shakir, 2005: 164).

ان تبع [ʔi · tabiʕa...] (If he had followed ...).

c.[ʈ] voiceless, alveolar, plosive and pharyngeal. This sound is pronounced when the back of the tongue is raised towards the velum (Hassan, 1990: 94):

٢٣٠ قال تعالى (فان طلقها ...) البقرة الاية ٢٣٠ [qaala taʕaala: faʔi · ʈallaqahaa ...] (so if he divorces her ...) (Shakir, 2005: 69). انطفأ [ʔi · ʈafaʔa] (extinguished).

d.[z] voiced, alveolar, fricative and plain: ٤٤ قال تعالى (... مالكم من زوال) ابراهيم الاية ٤٤ [qaala taʕaala: ... maalakum mi · zawaal]. (... there will be no passing away for you) (Shakir, 2005: 311). منزل [ma · zil] (house).

e.[ʂ] voiced, alveolar, fricative and pharyngeal. This sound is produced when the back of the tongue returns back towards the back wall of the pharynx (Hassan, 1990: 100): ان صلى [ʔi · ʂalla ...] (If he had prayed ...). انصاف [ʔi · ʂaaf] (justice).

f.[s] voiceless, alveolar, fricative and plain: ينسى [ya · saa].

4.[ɭ] is pronounced when the front part of the tongue is raised towards the hard palate. It can be described as palatal, nasal and voiced. This sound occurs when [n] is followed by:

قال تعالى (... فمن شاء ...) الانسان a.[ʃ] voiceless, palato – alveolar, fricative and plain:

[qaala taʕaala: ... famaʕ ʃaaʔa ...] (... so whoever pleases ...) (Shakir,

2005: 672). [ʔiʕʃaaʔ] انشاء (composition).

قال تعالى (فانجيناه...) الشعراء الاية ١١٩ b.[j] voiced, palato – alveolar, affricate and plain:

[qaala taʕaala: faʔaʕjaynaahu ...] (So we delivered him ...) (Shakir, 2005: 433). من

جاء [maʕjaaʔa] (who came).

5.[ŋ] is pronounced when the back of the tongue is raised to touch the soft palate. It can be described as voiced, velar and nasal. This sound occurs when [n] is followed by:

a.[k] voiceless, velar, plosive and plain: ٢٧ [qaala taʕaala: ... miŋ kul ...] (of every kind ...) (Shakir, 2005: 402). منك [miŋka] (from you).

b.[q] voiceless, uvular and plosive. It is pronounced when the back of the tongue is raised to touch the back wall of the pharynx (Hassaan, 1990: 97): قال تعالى (... ينقذون) (3)

ان قال [qaala taʕaala: ... yunqaduun] (... rescued) (Shakir, 2005: 510). [ʔiŋqaala] (If he said ...)

As far as examples cited above are concerned, Yousif (2005: 89) names such a process as hiding which means that the consonant is pronounced without gemination . It is a phonological process relatively associated with the place of articulation of the sounds neighboring to [n]. When neighboring sounds such as [t, t] and [d] are close to [n] where they are produced with the tip of the tongue touching the alveolar ridge, [n] is strongly hidden. When [n] is followed by [q] and [k], it is weakly hidden because its place of articulation is far from those of [q] and [k]. The third group of consonants whose places of articulation mediate between those of the two groups mentioned earlier includes [ʃ, ʔ, θ, j, ʒ, s, z, f, ɖ] and [ʰ]. It is obvious that such a process occurs in one or two words. As a matter of fact, the nasalization of [n] becomes stronger whenever the place of articulation of the hiding sound is far from that of [n]. Additionally, nasalization of [n] is stronger than the features of the hiding sounds such as velarization and sibilant. It should be noted that the term hiding is mentioned by Sibawayhi when he talked about assimilation of [n] saying that [n] is hidden when followed by one of the consonants stated in the examples above (Al – Seegh, 2007: 234 – 35). In this respect, Al – Daani points out that when [n] is hidden in the following consonant, it transfers from its original place of articulation to that of the following consonant and it keeps its nasalization (Al – Rufo'o'a, 2010: 187).

Generally speaking, [n] partially disappears and the following hiding sound becomes nasalized . As a result, [n] becomes less sonorant. Additionally, voiceless consonants preceding [n] become voiced under the influence of the voicing of [n].

Hiding is a common state of [m] before [b] and many people call this a bilabial hiding to be different from that of [n] which is referred to as real hiding. Hiding of [m] is investigated when the two lips come together and that [m] is pressed in order to pronounce [b] (Al- Hamad, 2009: 92).

4. Contrastive Analysis

This section deals with comparing and contrasting assimilation and nasalization patterns of /n/ and how it is hidden in both standard Arabic and standard English in order to find out similarities and differences between them.

4.1 Assimilation Patterns of /n/ in English and their counterparts in Arabic

1. /n/ → /m/ → /b/

ten books /ten buks/ → /tem buks/
 ان بورك [ʔan buurika] → [ʔam buurika]

2./n/ → /m/ → /m/
 ten men /ten men/ → /tem men/
 من معه [man maʕahu] → [mam maʕahu]

3./n/ → /l/ → /l/
 Human laws /hjuumən lo:z/ → /hjuuməl lo:z/
 من لعب [man laʕiba/ → [mal laʕiba]

4./n/ → /r/ → /r/
 Human rights /hju:mən raits/ → /hjuumər raits/
 من ربي [min rabbi] → [mir rabbi]

4.2 Assimilation Patterns of /n/ in English without Counterparts in Arabic

1./n/ → /m/ → /p/: ten pens /ten penz/ → /tem penz/
 2./n/ → /ŋ/ → /k/: ten cars /ten ka:z/ → /teŋ ka:z/

3./n/ → /ŋ/ → /g/: ten girls /ten gə:lz/ → /teŋ gə:lz/

4.3 Assimilation Patterns of /n/ in Arabic without Counterparts in English

1. [n] → [w] → [w]: من وال [min waal] → [miw waal]
 2. [n] → [y] → [y]: ان ياموسى [ʔan yaamuusaa] → [ʔay yaamuusaa]

4.4 Nasalization Patterns in English without Counterparts in Arabic

1./d/ → /n/: He wouldn't do it /hi: wunn(t) du it/.
 2./z/ → /n/: He doesn't know /h: d • nn(t) nəu/.
 3./ð/ → /n/: He wasn't there /h: wonn(t) neə/.
 4./t/ → /n/: I don't know /ai dəun nəu/.

4.5 Patterns of Hidden /n/ in English and their counterparts in Arabic

/n/ is partially hidden when followed by consonants such as /θ, t, ð, j, s, ʃ, d/ and /z/ in both standard English and standard Arabic:

- 1.ten things /te • θɪŋz/. اثني [ʔunθawi]
- 2.ten tents /teŋ tents/. متنتون [muntahuun]
- 3.when they... /weŋ ðei/. لينذر [liyunðir]
- 4.ten jobs /teŋ dʒɒbz/. من جاء [man jaaʔa]
- 5.ten sides /te • saɪdz/. ينسى [yansaa]
- 6.ten shirts /te • ʃə:ts/. من شاء [man ʃaaʔa]
- 7.ten doors /te • do:z/. عنده [ʕindahu]
- 8.ten zoos /te • zu:z/. من زوال [min zawaal]
- 9.ten cups /te • k • ps/. من كل [min kul].

4.6 Patterns of Hidden /n/ in English without Counterparts in Arabic

/n/ is partially hidden when followed by /m, f, g/ and /k/ in English:

- 1.ten men /te • men/. 2.ten girls /te • gə:lz/. 3.ten friends /te • frendz/

4.7 Patterns of Hidden /n/ in Arabic without Counterparts in English

1. فانظر [fan • ur]. 2. طلقها فان. [faʔin ʔallaqahaa]. 3. ان صلى. [ʔin ʕallaa].
4. ينفذون [yunqaðuun].

5. Conclusions

It can be concluded that there are similarities and differences between standard English and standard Arabic assimilation and hiding patterns of /n/ and that similarities are more than differences. There are also nasalization patterns of /n/ that occur in English without counterparts in Arabic. Consider the following points:

- 1.Assimilation patterns of /n/ in standard English and Standard Arabic:

- a. /n/ → /m/ — /b, m/. b. /n/ → /r/ — /l, r/
2. Assimilation patterns of /n/ in English without counterparts in Arabic:
a. /n/ → /m/ → /p/. b. /n/ → /k/ — /g/
3. Assimilation patterns of [n] in Arabic without counterparts in English:
[n] → [w, y] — [w, y]
4. Nasalization patterns of /n/ in English without counterparts in Arabic:
a. /d/ → /n/. b. /z/ → /n/. c. /ð/ → /n/. d. /t/ → /n/
5. /n/ is partially hidden when followed by consonants such as /θ, t, ð, j, s, ʃ, d, k/ and /z/ in both standard English and standard Arabic.
6. /n/ is partially hidden when followed by consonants such as /m, f/ and /g/ in standard English.
7. /n/ is partially hidden when followed by consonants such as [ʔ, ʈ, ʂ] and [q] in standard Arabic.
8. The vowel sound preceding /n/ in English becomes nasalized.

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